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NATIONAL PETROLEUM NEWS

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Mark of 100,000 Barrels for Panhandle Attainable by September 1

By A. F. Hinton
N. P. N. Staff Writer

AMARILLO, TEX.

THE Panhandle field now is really just hitting its stride. Compared to the intensity with which the field now is being developed by all companies, large and small, all previous activity takes on the appearance of having been merely a preliminary skirmish as a forerunner to the real battle which is now going on. All hands are after the oil and are using every resource at their command to get it quickly.

The field now is making well over 50,000 barrels daily, and there seems no reason to doubt that it will be making twice that much by September first. In fact, it may reach that figure within the next 30 or 40 days the way things are going now, but the later date is generally used by those brave enough to make predictions. The figure of 100,000 barrels a day is used merely as a marker in the field's progress, as it is at that point that a field really gets into the major class as a producer. There is no reason now to think that that will be the field's peak output—it may double that before it is through.

There are now 561 operations under way in the entire Panhandle, 60 of which are locations or first reports, the remainder, 501, being drilling wells, or those temporarily shut down. In addition, there are 10 operations under way in the Oklahoma Panhandle, with more to come, and three wells are drilling or shut down in Beckham county, Okla. Thus, in the whole territory there are 574 wells in some stage of development, a figure which undoubtedly will have risen to more than 600 before the end of this week. In Hutchinson county, where the big play is centered, there are 376 operations under way and last week there were 38 first reports.

It is probable that new locations will average 25 to 30 weekly for the next two months, while completions should reach about the same figure each week after July 15. At least 30 wells should be completed within the next two weeks, and it is probable that about 75 new wells will be in the pay by that time, and in some stage of completion. These wells should add about 20,000 barrels of new production to the field's total, which, allowing for decline of older wells, would put the Panhandle up to around 65,000 barrels daily by July 15.

Output Fluctuates

THERE have been some violent fluctuations in individual well production, some wells going dead on account of "losing gas" and others dropping on account of paraffin accumulation. Two big wells dropped almost out of sight in this manner, and caused the field to show a decline of more than 4000 barrels during the week ended June 26. One of these wells was brought back to a higher figure than it had before paraffin had caused it to go off, and this, with a number of new completions, enabled the field to show an increase of 8600 barrels in the week just closed. For the past week, the Panhandle had 189 wells averaging 54,084 barrels daily. Of this amount, Hutchinson county had 135 wells with daily average output of 48,131 barrels.

In the middle of last February, when the writer made his first trip to the Amarillo field, there were 70 producing wells in the Panhandle with total output of 5252 barrels daily. In the succeeding five months, the number of producing wells has been doubled, while the production has geen increased tenfold. At that time there were 21 companies or individuals producing oil in Hutchinson county, their 29 wells making at that time 3070 barrels daily. Today there are 55 producers with 135 wells and 48,000 barrels daily output.

No Trunk Lines Announced

ALTHOUGH production has reached a high figure, and all indications point to the certainty of its going a great deal higher in the near future, no major pipe line company has yet announced its intention of constructing a trunk line to the field. Inasmuch as the field's future status seems reasonably well assured, it seems reasonable to believe that difficulties to be met with in handling the peculiar Panhandle crude through a long line is the principal cause of the delay in furnishing trunk line facilities In the meantime, crude is being handled through pipe lines to loading racks along the Santa Fe railway and large amounts also are being placed in steel storage after having been run by the pipe line companies. At present, steel storage completed and building in the area has capacity of nearly 5,500,000 barrels.

Latest entrant into the crude market in the Panhandle is the Humble Pipe Line Co., which is completing an 8-inch line from the field to Panhandle. It is also laying a 4-inch line from the Clark & Baldridge well in Gray county to Pampa, about six miles, whence the crude will be shipped in tank cars. The Humble also is building one 80,000-barrel tank and probably will construct more as needed. It was rumored that this company was about to start construction of a trunk line into the field, but it has been impossible to confirm this. Officials of the Prairie Pipe Line Co., both in Tulsa and Independence, state to the writer that their company has no definite plans for building a line to the Panhandle at this time. Like

Hutchinson County Drilling Operations Analysis

Company	Locations	Rigs	Drilling	Shut Down
Amarillo Oil			1	
Amerada Petroleum			4	
American Ref	4		1	
Anderson-Prichard	1			
Apex Oil			2	
Bear Creek Oil			1	
Big Creek Oil				1
Buffalo Oil	1			
Canadian Riv. Oil		1	1	
Canyon Oil		1	2	
Center Dome Oil				1
Clark & Hagy	1			
Coble-Whittenburg			3	
Cockrell-McIlroy		2	1	
Delmar Oil	2	1	1	
Devonian Oil	1	2		
Dixon Crk. Oil		3	22	1
Dominion Oil	1			
Douglas Oil			1	
Drysdale, J. E				1
Dunnigan et al			1	
Echo Oil		1	3	
Empire G. & F		2	5	1
Flowers et al			1	
Fly-Blackburn			2	
Gibson Oil			5	
Gibson-McMillen			1	
Goldelline Oil	1	1	2	
Golding-Phillips			1	
Gulf Prod	20	7	18	
Hagy, L. R	1			
Harvey Oil			1	
Heywood, W. Scott			1	
Heywood et al		1		
Hughes, J. K. Dev		2	11	
Hutchinson Oil				1
Inspiration Oil			1	
Japhet, Dan			1	
Lennix, W. E. et al			1	
Lucky Ten	2		2	
McCamey-Sherrin			2	
McIlroy Bros		1	5	
McIlroy-Herring			2	
McIlroy, W. O		1	2	
McKnight et al			1	
McMan O & G	1	3	8	
Marland	10	8	20	
Middleton, J. H			2	1
Midwest Exp	1		6	
Minnehoma Oil			1	
New Domain O & G			1	
Paramount Oil			1	
Permian Oil			1	
Phillips-Currie		2		
Phillips Heywood			2	
Phillips Pet	3	14	43	2
Prairie O & G			1	
Pure Oil	2			
Relief Oil		1	1	
Riley-Holmes	1			
Roxana Pet			7	
Ryan Pet			1	
Silk, W. W			1	
Sinclair O & G			1	
Skelly Oil	1	1	5	5
Smith-Bynum			1	
Spring Crk. Oil			2	
Summit Oil	1		1	
Sunburst Oil			1	
Sunny Jim Oil			1	
Sun Up Oil			1	
Swindler & Son			1	
Texas Co			1	
Texhoma O & R			1	
Tex-O Oil			1	
Travelers Oil	1			
Triangle Oil			3	
Ward, J. D				1
Ward & Snell			1	
Wentz Oil		2		
Westex Oil		3	3	
White Eagle O & R	2	1	7	
Total	59	67	235	15

practically all the major pipe line companies, they have surveyed the route and have gone over the ground so as to be ready to start work when the time comes, but have gone no further.

The water situation in the Panhandle apparently is getting no worse. Most producers have come to the conclusion already reached by the large companies that excessively large shots do more harm than good, and as a result, the past few weeks have seen only a few large shots, and a correspondingly small number of wells making water. It is noteworthy that all of the few additions to the list of wells making water in past weeks have been wells that had been shot with heavy charges of nitroglycerine, that is, shots in excess of 300 quarts. General practise in the field now is to shoot the wells with not more than three quarts of nitro to a foot of pay, with two quarts to the foot about the average amount.

Big Wells Fall Off

ONE of the best wells of recent weeks in the Hutchinson county field was the Lucky Ten Oil Co. No. 1 Smith, in section 11, block Y, in the heart of the field's "rich spot." This well was shot with 360 quarts from 2763 to 2880 feet, or almost exactly three quarts per foot of pay, and made 4500 barrels in the first 14 hours after the shot. It then averaged 5700 barrels daily during the ensuing week. When it was about a week old, the gas pressure disappeared suddenly and the well went dead and averaged only 450 barrels of oil with 10 per cent water, during the next week. It is now swabbing about 1000 barrels daily, and the gas pressure apparently is coming back to some extent. Bottom of hole in this well is about 2000 feet above sea level. It was one of the wells that helped cause the field to show a decline production last week.

Another well that contributed materially to this decline was the Canyon Oil Co. No. 3 Whittenburg, in section 12, block Y. This well averaged 2000 barrels daily week before last, but dropped to 300 barrels a day last week, on account of paraffin accumulation. It was cleaned out and the paraffin removed, after which it came back in fine shape, and is now making better than 3000 barrels daily.

All Panhandle operators are interested in experiments now being made with a chemical which is said to be very effective in removing paraffin and in preventing its accumulation. It was reported that Prairie Oil & Gas Co. had had considerable success in using this method of ridding one of its wells of paraffin, and other companies were trying it out. The chemical is known as Sur-Kut, and is manufactured by the Chicago Chemical Co. It is in the form of powder and has a very strong odor of ammonia. It comes in drums of 200 pounds, and sells for $1.00 a pound. The Prairie used about half of a drum of it in its well, and raised production from 35 barrels to better than 150 barrels a day. The latter figure was more than the well had made in a day during the past year.

Chemical Boosts Production

THIS well, which is known as the No. 1 Weatherly, and which is located in sec. 17, block Y, had been producing an average of 40 barrels daily over the past year. In preparing to make the Sur-Kut experiment, the well was cleaned out to bottom and swabbed dry, after which two bailers of the chemical were dumped on bottom. It was swabbed out a few hours later and the well was put back on the pump. It pumped 163 barrels in the first 18 hours and averaged 140 barrels a day for the next five days. At the price given above for the chemical, it figures about one dollar per barrel of increased production; in other words, 100 pounds of the chemical increased the well's output 100 barrels.

Gray county, where the Wilcox-Pampa Oil & Gas Co. drilled in its big

Coming Meetings

Oklahoma Oil Jobbers Association, Oklahoma City, July 8.

Pennsylvania Grade Crude Oil Association, Annual Meeting, McLure Hotel, Wheeling, W. Va., July 8.

Wisconsin Independent Oil Jobbers' Association, Hotel Whiting, Stevens Point, Wis., July 14.

Michigan Independent Oil Men's Association, Grand Hotel, Mackinac Island, July 15, 16.

Georgia-Alabama Independent Petroleum Marketers Association, Ansley Hotel, Atlanta, Ga., July 16, 17.

American Petroleum Institute, General Committee on Fire Prevention, Hotel Statler, St. Louis, July 22.

State Executives Club, Congress Hotel, Chicago, Aug. 20, 21.

Ohio Gas & Oil Men's Association, annual meeting, Columbus, O., Oct. 5, 6.

National Petroleum Marketers Association, Atlantic City, Oct. 26, 27, 28.

American Petroleum Institute, annual meeting, Mayo Hotel, Tulsa, Dec. 7, 8, 9.

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well a few weeks ago, is a center of activity that may soon rival Hutchinson county. This county now has 11 wells producing 3200 barrels daily, but about 2550 barrels of this is coming from one well, that being the Wilcox-Pampa well already referred to. The Clark & Baldridge well, about two miles northwest of the Wilcox well, also will be a big well when completed, and is estimated already as good for 1000 barrels daily. Since these wells came in, about 30 wells have started up in the vicinity, and there are now 36 operations in various stages of development in Gray county, of which 17 were first reports of the past week.

The Wilcox interests are fishing at 3050 feet in their No. 2 Coombs-Worley, in section 59, block 3 and are shut down temporarily at 2350 feet in their No. 4 Worley et al., in section 62, block 3. This company has made locations and is moving in rigs for its No. 7, 8, 9, 10, 11, 12, 13, and 14 Worley, all in section 62, block 3. Empire Gas & Fuel Co. is building three rigs in Gray county, these being No. 1 Huey, in section 129, block 3; No. 1 Wall, in section 161, block 3, and No. 1 Worley, in section 63, block 3.

Gulf Production Co. has also made a number of locations in the Gray county field, and is erecting derricks rapidly. This company will drill its No. 1 Holmes, in section 87, block 3, I&GNRR survey, and its No. 1 Merten, in section 88, block 3. It also has made location for its No. 1, 2, and 3 Worley, all in section 83, block 3. Magnolia Petroleum Co. has made locations for No. 1, 2, 3, 4, and 5 on its Merten lease in section 82, block 3. Pure Oil Co. has made two locations, its No. 1 Benton, in section 63, block 3, and its No. 2 on the same lease. The Sun Oil Co. has location for its No. 1 Worley in section 83, block 3.

Carson County

Company	No. Wells	Daily Avg. Prodn.	
American Refg	4	505	
Gates Oil	1	10	
Gulf	9	250	
Marland	7	1,150	
W. W. Silk	2	80	
Skelly	2	100	
Sunny Jim Oil	2	45	
Texas Co	10	190	
Total	37	2,330	

Gray County

Clark et al	1	5	
Empire	1	20	
Shamrock Pet	1	180	
Wilcox O & G	4	2,855	
Texas Co	1	38	off 5 days
Total	9	3,098	

Hutchinson County

American Refg	1	85	
Amerada	2	90	
Badger Oil	1	50	
Apex Oil	1	775	
Barnum et al	1	off	
Canadian River	4	400	
Canyon Oil	2	5,450	
Centerfield	1	off	
Coble-Whittenburg	2	930	
Cockrell-McIlroy	2	1,470	
Currie-Phillips	1	2,050	
Derby Oil	1	580	
Devonian Oil	1	53	
Dixon Crk	9	5,070	
Double Five Oil	1	95	
Dunnigan et al	1	400	
Empire-Wilson	1	5	
Fly-Blackburn	1	250	
Gates Oil	4	325	
Gibson-McMillan	1	40	
Golding-Phillips	1	off	
Gulf-Panhandle	13	2,890	
Herring-McIlroy	2	290	
Holmes et al	1	275	
J. K. Hughes Dev. Co	3	725	
Lenix-Pattison	1	1,799	
J. H. Lenix	1	25	
Lucky Ten Oil	1	440	30% w.
Marland Oil	1	25	
McIlroy Oil	3	480	
McMan Oil	4	1,790	
Middleton	1	35	
Midwest Explo	3	425	
Newby	1	30	
New Domain Oil	3	30	
Phillips Pet	20	8,006	
Phillips-Blaisdell	1	35	
Prairie O & G	3	120	
Roxana Pet	3	1,550	#3-15% w.
Skelly Oil	6	910	
Relief Oil	1	600	
Riley	1	415	
Ryan Consol	1	190	
Skiatex Oil	2	525	
J. L. Smith	1	off	
Scott Heywood	1	off	
Smith-Bynum	1	140	
Summit Oil	1	520	
Spring Crk Oil	1	130	
Sunny Jim Oil	3	395	
Travelers Oil	2	770	
Ward et al	2	1,190	
Westex Oil Co	3	3,910	
White Eagle	4	1,310	
Whittington	1	45	
Total	135	48,131	

Potter County

Amarillo Oil	1	35	

Wheeler County

Gibson Oil	2	390	
Midwest Explo	3	15	
Texhoma	1	85	
Upham Gas Co	1	off	
Total	7	490	
Grand Total	189	54,084	
Last week	186	45,462	
Increase	3	8,622	

Summary of Field Operations in the Texas-Oklahoma Panhandle Territory Week Ending July 3, 1926

County	First Reports	Rigs, Locations and Drilling	Shut Down
Carson	1	28	5
Collingsworth	1		
Dallam			1
Gray	17	31	1
Hartley		6	1
Hemphill	2		
Hutchinson	38	361	15
Lipscomb		2	
Moore		8	1
Ochiltree		3	
Potter		4	1
Roberts		1	1
Sherman	1	3	
Wheeler		7	5
Total, Texas	60	454	31
Beckham, Okla			3
Cimmarron, Okla	1		
Texas, Okla	2	6	1
Total, Okla	3	6	4
Grand Total	63	460	35

Phillips Amends Answer In Stabilizer Suit

TULSA, July 3.—Phillips Petroleum Co. has filled an amended answer in the U. S. District Court of Delaware, to the suit filed against it by the Carbide & Carbon Chemicals Corp. alleging infringement of its patents covering stabilization of natural gasoline and the product itself.

As a result of the research of its technologists and attorneys, the Phillips Petroleum Co. has listed in its new answer a large number of additional patents and technical papers which it claims antedate the Thompson and De Brey patents (relied on by the Carbide & Carbon) in describing stabilization. The answer cites 16 additional U. S. patents running back as far as Oct. 31, 1871, one additional German patent, one additional French patent and two additional British patents. Ten additional printed publications are cited.

The amended answer cites 29 U. S. patents, 2 German patents, 2 French patents, 4 British patents and 1 Netherlands patent against the Carbide and Carbon Chemicals Corp's. claims. Following are the patents listed:

United States Patents

Rogers, 120,539—Oct. 31, 1871.
Van Syckel, 143,945—Oct. 21, 1873.
Barbet, 436,684—Sept. 16, 1890.
Linde, 727,650—May 12, 1903.
Lummus, 731,799—June 23, 1903.
Linde, 795,525—July 25, 1905.
Linde, 815,601—Mar. 20, 1906.
Frasch, 845,735—Feb. 26, 1907.
Chute, 896,435—Aug. 18, 1908.
Levy et al, 959,563—May 31, 1910.
Claude et al, 967,105—Aug. 9, 1910.
Illges, 968,478—Aug. 23, 1910.
Saybolt, 989,927—Apr. 18, 1911.
Guillaume, 996,081—June 27, 1911.
Claude, 1,025,962—May 12, 1912.
Blau, 1,073,843—Sept. 23, 1913.
Blau, 1,074,094—Sept. 23, 1913.
Sewell, 1,108,853—Aug. 25, 1914.
Pictet, 1,119,312—Dec. 1, 1914.
Rosanoff, 1,171,464—Feb. 15, 1916.
Sanford et al, 1,252,725—Jan. 8, 1918.
Lacy, 1,272,059—July 9, 1918.
Tschudy, 1,348,606—Aug. 3, 1920.
Lewis et al, 1,392,584—Oct. 4, 1921.
Schill et al, 1,415,058—May 6, 1922.
Bertsch, 1,452,061—Apr. 17, 1923.
Von Groeling, 1,456,953—May 29, 1923.
De Brey, 1,465,598—Aug. 21, 1923.
De Brey, 1,465,599—Feb. 5, 1924.
Kerr, 1,482,933—Feb. 5, 1924.
Schill et al Re., 16,052—Apr. 21, 1925.
Cooney, 1,543,750—June 30, 1925.

German Patents

Badische Anil. und Soda Fabric, 285,703—Feb. 18, 1913.
Blau, 244,688—Aug. 31, 1910.
Bronn, 338,358—June 18, 1921.

French Patents

Von Groeling, 322,789—July 4, 1902.
Barbet et Fils et Cie, 470,242—June 10, 1913.

British Patents

Barbet et Fils et Cie, 14,041—June 10, 1914.
Soc. Anon. Des Establish Egrot, 127,853—May 31, 1919.
De Batahhsche Petroleum Maatschappij et al, 123,522—Oct. 30, 1919.
Boult, 30,229 of 1909.
Levy et al, 20,053 of 1902.
The Linde Brit. Refrigeration Co., Ltd., 14,111 of 1902.

Netherland Patent

De Bataafsche Petroleum Maatschappij et al, 4,719—Feb. 2, 1920.

A. P. I. Meeting Dec. 7 and 8

NEW YORK, July 3.—The seventh annual meeting of the American Petroleum Institute will be held at the Mayo Hotel, Tulsa, on Dec 7 and 8. Members of the board of directors living in Oklahoma have formed a general committee on local arrangement, of which E. B. Reeser, president of Barnsdall Refining Co., Tulsa, is chairman.

Sub-Committee chairmen, as appointed by the general committee are: entertainment, D. E. Buchanan, Chestnut & Smith Corp.; automobile transportation, P. M. Miskell, Empire Refineries, Inc.; hotel accommodations, W. C. Franklin, Tidal Oil Co.; and finanace, W. G. Skelly, president, Skelly Oil Co.

Oklahoma and Other Refining Groups Hard Hit by New Rate Ruling

By J. C. Chatfield
N. P. N. Staff Writer

Staff Special
TULSA, July 3.

ALL refining groups in the southwest except Kansas and Kansas City have been dealt a blow from which it will be difficult to recover, as a result of the decision of the Interstate Commerce Commission in the general Mid-Continent rate case which has been under consideration for about two and a half years. The decision of the commission followed very closely the recommendations of the examiner which were announced on Sept. 1, 1925.

Group 2 (Kansas) refiners have won an almost complete victory in the case. By its decision the commission recognized the argument of the Kansas manufacturers that since their plants are nearer to the consumers, they are entitled to lower rates to all points in the consuming territory than groups farther south.

Formerly Kansas refiners enjoyed differentials under Group 3 (Oklahoma) to points in Iowa, Nebraska and a part of Missouri. As a result of the decision they will have lower rates than Oklahoma to all states west of the Mississippi and north of Kansas except North and South Dakota and the northern part of Nebraska on which the commission reserved decision. Out of 18 representative destination points in the nine states of Western Trunk Line territory, Kansas refiners formerly had differentials to 8 points ranging from 1 to 6½ cents per 100 pounds. Under the new decision Kansas shippers will have differentials ranging from 2 to 7 cents per 100 pounds to all 18 points.

Kansas City (Group 1) refiners have improved their position through the case as well. Out of 17 key destinations the Kansas City refiners have increased their differentials under other groups to 13 cities. Their advantage has been decreased at three cities and remain unchanged at one city.

Differentials Through Increase

OF even greater importance in the whole competitive situation is the fact that the commission authorized the railroads to create the differentials by raising the rates of Group 3, Texas, and Louisiana and Arkansas refiners rather than by lowering the Kansas rates below those now in effect from Oklahoma. It was hoped by the Kansas refiners that they would be granted differentials through lower rates and much of their testimony before the examiner tended to show that rates were too high.

A study of the rates from eight groups of origin in the Mid-Continent to the 18 key cities, which makes 144 new rates under the decision, shows that 75 rates have been increased, 53 rates reduced and 16 rates unchanged. Increases in rates were more substantial than decreases. The average of the 75 increases authorized is 2.3 cents per 100 pounds while the average of the 53 reductions is only 1.9 cents per 100 pounds.

Mid-Continent refiners have sold a major part of their finished products in Western Trunk Line territory with the addition of Michigan and Indiana,, in the past. Formerly they had a large business in Ohio but that has been growing smaller in recent years. Competitors of the Mid-Continent plants for this business have been in the Casper group and the Mississippi river and Indiana-Illinois pipe-line plants.

With rates increased from the southwest without compensating increases from Casper, Sugar Creek, Whiting, East St. Louis and other refining points located in centers of population, the Mid-Continent group will be under an even greater handicap in getting business than it has in the past. No one is willing to predict at this time just how much the outlet of Mid-Continent refineries will be narrowed down by the decision but general opinion is that the effect will be little short of disastrous.

Faint Ray of Hope

THERE is a faint ray of hope that railroads may see the wisdom of protecting their large shippers in the southwest by not taking advantage of the raises. Undoubtedly the railroads do not wish to kill any geese that lay golden eggs. If they can be shown that the increases would lessen their tonnage and profits materially it is possible that the carriers might create the differentials as ordered by reducing the Kansas rates. Representations will be made to the carriers along this line in as forceful a manner as possible.

Some traffic managers feel that possibly the raises from Group 3 and further south may be equalized to some extent by increases in rates from the plants of important competitors nearer to the consuming areas. These raises might come as a result of Ex Parte 87, the general investigation of rates in Western Trunk Line territory, which is now before the commission for consideration. As in the case of the possibility that railroads might not take advantage of the order of the commission, this hope is rather faint. It might well be compared to the optimism of the drowning man who clutched at the straw.

Some refiners have thought of the possibility of seeking an injunction against the new rates in federal courts. If the worst appears inevitable this last step may be taken in an effort to save the situation.

History of Case

THE Mid-Continent Oil Rate Case, as it has been called generally, was brought originally by the Sinclair Refining Co. and others at Kansas City, and the Miller Petroleum Co. and others, in other parts of the state. The cases were filed early in 1924. Every other refining group in the Mid-Continent, including the Gulf coastal manufacturers, intervened in the proceeding to protect their own interests.

Kansas City refiners attacked the reasonableness of their rates to destinations in North and South Dakota, Nebraska, Minnesota, Michigan, Wisconsin, Iowa, Illinois and Missouri, as well as the relationship of their rates to those of

High Points of the Mid-Continent Rate Case

1. Gave Group 2 (Kansas) differentials under Group 3 (Oklahoma) to the western half of the Mississippi valley with the prospect of future adjustment of proportional rates which would extend the differential on east to the Atlantic.
2. Held open rates to Dakotas and northern Nebraska and extreme edge of northern peninsula of Michigan for further consideration.
3. Created differentials by advancing Group 3 rate to most points. This results in increases from north Texas, Louisiana-Arkansas and south Texas as well.
4. Wiped out equality of Arkansas-Louisiana refiners with Group 3 on goods moving to a large part of Western Trunk Line territory.
5. Advanced differentials of New Orleans to 1½ cents per 100 to St. Louis, Peoria and Chicago.
6. Advanced differentials over Group 3 from San Antonio and south Texas to many important destinations.
7. Fixed maximum reasonable rate for heavy oils at 80 per cent of the refined oil rate.
8. Lowered rates to Iowa destinations and a few scattered points in other states.

other groups in the southwest. They asked for differentials running up to 12 cents per 100 pounds under Group 3.

Kansas refiners made their whole case on a plea for differentials under Group 3 running from 2½ to 6½ cents per 100 pounds.

Northeastern Oklahoma plants in the original Group 3 complained to the commission that the whole trouble was that their group had been enlarged by the addition of new and more distant plants so that the average mileage had been increased over Kansas. They came forward with a proposal for regrouping the refining centers into nine groups with suitable small differentials for short hauls, which would disappear at a great distance.

Western and central Oklahoma refiners opposed the plan to eliminate them from Group 3.

The railroads themselves came in with a proposal for higher rates and a regrouping of shipping points into 14 new groups.

Commission Was Generous

A CHECK of the new rates from Group 3 to various destinations shows that the railroads have been granted rates in a number of cases higher than those they asked for at the original hearing at Excelsior Springs, Mo., in June, 1924. They asked for a rate of 24 cents to Kansas City from northern Oklahoma and got a 27-cent rate, asked for 37½ cents to Chicago and got 39 cents, asked for 31 cents to St. Louis and got 32, and asked for 41 cents to Milwaukee and got 42 cents. The new rates are thus higher than demanded for northeastern Oklahoma and about in line with what the railroads wanted from shipping points in the central part of the state.

After the original hearing of the case at Excelsior Springs which lasted a full week, the case was continued until in October when a second hearing was held at Fort Worth. The final hearing was held in December, 1924, at St. Louis. The recommendations of Examiner Charles R. Seal were announced by the commission on Sept. 1, 1925, and the decision of the commission itself on June 30. The carriers are granted 120 days in which to publish new rates to the key points named as shown in Table No. 1, and to all other points in line with the points named.

Oklahoma-Kansas Competition

A GREAT deal of thought is being given by refiners to the new competitive situation which will develop between Oklahoma and Kansas when the new rates go into effect. Kansas formerly had a differential under Oklahoma to a small part of the consuming territory but now it will have a differential to the entire area. It is assumed that the carriers will advance their proportional rates across the Mississippi river in line with the increases granted. If that is done, Kansas refiners will have a differential into Ohio and on east to the Atlantic ocean.

The new minimum differential of 2 cents per 100 amounts to $10.60 on an 8,000 gallon car of gasoline or kerosene. In the case of a single 25,000 barrel refinery in Oklahoma this differential on a year's business would amount to over a third of a million dollars.

At least one important refiner located near the Kansas line in Oklahoma is considering the possibility of laying welded pipelines across the border into Kansas, installing storage and a loading rack in that state. By pumping the oil 25 miles this refiner could reduce his rate to some points as much as 7 cents per 100 pounds, to others 3 to 4 cents and to every point at least 2 cents.

Some refiners assert that the price basing group of the southwest will shift from Oklahoma to Kansas and that Oklahoma refiners within a year, will be selling on a f. o. b. Group 2 basis, absorbing the freight loss. Kansas refiners, of course, believe that group 3 will be the standard market as before and that they will merely be able to increase their profits by selling f. o. b. Group 3.

In any case the result will be that on a market in which it is possible for Kansas refiners to make only $10.60 per car net profit on their light oils, Oklahoma refiners will be operating without profit. At times when Kansas refiners make only $5.30 per car the Oklahoma refiners will be operating at a loss of $5.30 per car.

With such a handicap in the offing one Oklahoma refiner is thinking of junking one of his plants and moving as much of it as he can salvage to Kansas or some consuming center.

Observing the trend of rates over recent years one traffic manager of an Oklahoma refinery has come to the conclusion that in the future the refining capacity of Oklahoma will grow smaller instead of larger and that more and more of the raw material produced in the state will be moved outside to be finished into gasoline. If it were possible to get crude oil through a common carrier pipeline in some consuming center he would be in favor of taking a loss now instead of later and moving the plant near to the consumer.

No Advantage to Oklahoma

APPARENTLY Oklahoma is headed for a point where it will have no rate advantage over any other producing center in any direction. On movements to the southeast Louisiana and Arkansas plants have the first call on the business. And next come north Texas refiners with rates lower than Oklahoma. The same situation is true on export business. Louisiana and Arkansas get the first crack at the business. What they leave north Texas can have and if any orders are still unfilled Oklahoma can have the remainder. With the new Kansas and Kansas City differentials these two groups will get first call on business in the Mississippi valley and Oklahoma can have the remainder.

Shreveport and El Dorado refiners will be handicapped in getting into the north by the new decision. In the past this group of manufacturers has enjoyed Group 3 rates but the commission's order put a handicap of differentials over Group 3 and 13 out of the 18 representative destinations.

It will be much more difficult for north Texas refiners to do business in Indiana territory in the future. Their flat differential of 2½ cents per 100 over Group 3 was not increased but the in-

Table No. 1—Showing Present Rates and Changes from Them by I. C. C. Order

	From Group 1 (Kansas City)		From Group 2 (Kansas)		From Group 3 (Oklahoma)		From N. Texas		From Ranger		From Shreveport-El Dorado		From Baton Rouge New Orleans		Texas Gulf Coast		San Antonio	
	Present	Proposed	Present	Proposed	Present	Proposed	Present	Proposed	Present	Proposed	Present	Proposed	Present	Proposed	Present	Proposed	Present	Proposed
Kansas City	....	....	17½	20	24	27	29½	31	29½	32½	29½	31½	48	48	32	34	34½	34
St. Louis	26	25	29½	30	29½	32	32	34½	32	36	29½	32	29½	33½	32	35	34½	35½
Chicago	32½	32	36	37	36	39	38½	41½	38½	43	46	39	36	40½	38½	42	41	43½
Omaha	24	24	29½	29½	33½	33	36	35½	39	37	33½	36	54	54	36	38½	38½	38½
Lincoln	24	24	29½	29½	33½	33	36	35½	39	37	33½	36	57½	57½	36	38½	38½	38½
Des Moines	24	24	29½	29½	33	33	35½	35½	38½	37	33	36	50½	50½	35½	38½	38	38½
Cedar Rapids	26½	27½	33	33	34	35½	36½	38	39½	39½	34	38½	50½	50½	36½	41	39	41
Ft. Dodge	29½	28½	36	34	38½	36½	41	39	44	40½	38½	39½	54	54	41	42	43½	42
Sioux City	29½	28	36	33½	39½	36	42	38½	45	40	39½	39	56½	56½	42	41½	44½	41½
Mason City	31½	31	38	36	40	38	42½	40½	45½	42	40	41	52½	52½	42½	43½	45	43½
Keokuk	26	26½	31	31½	31	33½	33½	36	36½	37½	31	33½	36	36	33½	36½	36	38
Sioux Falls	37	33	43	38	43	40	45½	42½	48½	44	43	43	59	59	45½	45½	48	45½
Dubuque	28	31	34	36	34	38	36½	40½	39½	42	34	39½	41	41	36½	42	39	43
Peoria	29½	29	33	34	33	36	35½	38½	38½	40	33	36	36	37½	38½	39	41	40½
Milwaukee	36	35	39½	40	39½	42	42	44½	45	46	39½	42	39½	39½	42	45	44½	46½
Warsaw	38½	39	44½	44	44½	46	47	48½	50	50	44½	47½	52½	52½	47	50	49½	51
St. Paul	37	35	43	40	43	42	45½	44½	48½	46	43	45	52½	52½	45½	47½	48	47½
Duluth	43	40	49	45	49	47	51½	49½	54½	51	49	50	49	50	51½	52½	54	52½

All rates in Cents per hundred pounds.

crease in Oklahoma rates will increase north Texas automatically.

New Orleans refiners as well as those on the Texas Gulf Coast and at San Antonio will be hurt in the same manner. The Texas Gulf and San Antonio Refiners will be saddled with a greater differential over Group 3 by the decision to almost every destination of the 18 named.

Fuel Oil Rates Fixed

RATHER general satisfaction with the findings of the commission on fuel oil rates is expressed by refiners. The commission split the difference between the demands of the railroads and of the shippers. The shippers asked that heavy oil rates be 75 percent of the refined oil rate and the railroads asked for 85 percent. The commission settled on 80 percent.

Under the old rate system of making heavy oils a flat 6 cents per 100 under light oils, the freight bill on a car of fuel oil moving a long distance was greater than the bill on a car of gasoline to the same destination. This was due to the heavier weight of the fuel oil. In every case in the future fuel will move more cheaply, car for car, than gasoline.

An indication of the apprehension with which the new rates are viewed may be seen in a statement by J. F. Lawrence, commerce counsel for the Kansas refiners in their petition for differentials. Mr. Lawrence is pleased with the result as far as differentials are concerned but views with alarm the general raise in rates because of the effect it will have on the entire competitive picture.

Following is Mr. Lawrence's statement:

"Naturally, I am pleased to have represented a successful litigant, but the far-reaching effect and harmful possibilities of the decision in this case to the industry as a whole leaves me apprehensive, rather than joyful.

"At this time, it is impossible to measure the full effect of this decision, and I shall not be surprised if the railroads themselves, would hesitate long before taking advantage of the increases authorized."

Most Important Since 1914

"THIS decision is, I think, the most important thing that has happened to the Independent oil industry in the Mid-Continent field since 1914, covering as it does the only territory to which any great volume of petroleum products can be shipped in fair competition with the pipe line refineries, because of the very material increase in freight rates, since 1918, and without having been able to thoroughly analyze the resulting situation, I think it conservative to say that if the increases authorized by this decision shall go into effect, it will mean an additional burden of more than ten million dollars a year on the Independent refining industry in the Mid-Continent field.

"I doubt, whether they can profitably operate under this additional handicap—if not, of course, the railroads would be equal, if not greater losers.

"This decision authorizes an increase of 3 cents per 100, equivalent to almost a quarter of a cent per gallon on shipments to Kansas City, Chicago, Peoria and other towns; increase of 2½ cents per 100 to St. Louis, Milwaukee, Keokuk and other towns. This is equivalent to a fair net profit and on the close margin at which petroleum products are sold, means all, if not more, than the net profit to the refiner.

"Taking St. Louis, Kansas City and Chicago, as an example, the refining output at each place is greater than the local consumption and the petroleum products consumed in each city originates in the Mid-Continent field, and always has been and in the future will be transported to these cities either by railroad or by pipe line.

Pipe Line Shipping Increasing

"UNDER the present level of rates, more than one-half of the oil consumed in Chicago, St. Louis and Kansas City is transported from the Mid-Continent field through pipe lines and this percentage has been gradually and materially increasing under the present level of rates and with an additional one-quarter of a cent in transportation cost, it would not be surprising that all oils consumed in these cities would be transported through pipe lines and therefore lost by the railroads.

"This is a matter that should appeal to the sound judgment and discretion of the railroads and I think they will hesitate long before they put into effect a rate, though authorized by the commission, which would take away from them this immense revenue.

"Some of the same railroads seeking an increase in the rate of 36 cents per 100 from Tulsa to Chicago, are today urging the commission to permit them to transport the same commodity from Tulsa to New Orleans at 22 cents per 100. In the latter case, they can say that a higher rate would cause them to lose the movement and they submit that they can transport gasoline from Tulsa to New Orleans for 22 cents per hundredweight at a profit, yet, in the face of the stern realities, they are seeking an increase in the 36-cent rate for a much shorter distance to Chicago. An analysis of the reports of the railroads of the United States shows that today they are losing almost $400,000 per day on oil alone because the freight rates are too high.

"It is my understanding that the most prosperous railroad in Oklahoma according to the annual reports, is the Midland Valley and that the Midland Valley shows a higher percentage of their tonnage to be oil than any other railroad. It is also a fact that the revenue received by the Midland Valley for transporting oil is lower per mile than practically any other railroad in Oklahoma.

Profit Comes from Volume

"THE answer is—the profit comes from volume, and not from high prohibitive rates. It is one thing to publish a rate, and it is another thing to get that commodity to transport. I believe the railroads will admit that if all of the oil that moves out of Oklahoma, North Texas, and Kansas should be transported by rail instead of pipe lines to the points where that oil is consumed, the revenue of the carriers would be materially increased even at one-half of the present rate. Henry Ford bought a railroad, which was hopelessly insolvent, and the first act was to reduce rates to a point where traffic would move.

"Careful study of the methods employed by a successful railroad operator must be more beneficial to some of the railroads, than a rate analysis trying to figure out how an increased rate can be published.

"The railroads recognize a river as a competitor, even though no steam boats ply its channel. They refuse to recognize a pipe line actually in existence, pumping oil each day, and I have been told that the railroads take the position that a railroad can not compete with a pipe line, if they will only investigate, they will find that the actual transportation of oil by rail costs less than does the actual transportation of the same commodity, the same distance by pipe line. In other words, with a pipe line already constructed and a railroad already constructed from Tulsa to Chicago, the actual cost of transporting 20,000 barrels of oil per day will cost more in actual money, through the pipe line than by rail, this being true, there is no reason for a pipe line.

"All the railroads in Oklahoma, have vacant space on their rails exceeding 50 per cent of their capacity and this vacant space could transport every gallon of oil that is transported out of Oklahoma and the only additional cost would be the labor, fuel and machinery used in the actual transportation.

"The refusal of the Standard Oil companies to pay prohibitive rates for the transportation of oil has made them the great companies they are today and the difference between what the Standard Oil companies pay for transporting oil and what their competitors—The Independent refiners—pay for the same transportation amount to more in dollars and cents than all the money the entire Standard Oil group has made during their existence.

"The position taken by the Kansas refiners in the beginning and closely followed to the very end of the case, was that the differential should be created by reducing rates and that no rate from Oklahoma should be increased. I am sure that the conditions not only justify, but demand that the railroads in this particular instance create the differential prescribed by reducing rates and under no condition or circumstance should a single rate be increased, unless at some particular point where some peculiar situation might justify a slight adjustment be in the main if the carriers should comply with the decision by reducing and not increasing rates, they would profit."

Spindletop, Famous in Oil History Of Texas, Stages "Comeback"

By Paul Wagner
N. P. N. Staff Writer

HOUSTON, July 3

SPINDLETOP, which in 1901 gave Texas its first "gusher" oil from caprock producing levels at about 1100 feet, again assumed leadership of Gulf Coastal fields this week with daily average yields only slightly below 18,000 barrels.

Bunching of deep wells below the 2700-foot level, on the south and west flanks of the Spindletop salt dome, brought about the famous field's "comeback" to a stage of economic importance in the petroleum industry generally.

Although the Gulf Coastal division of the industry figuratively perked up its ears and accorded Spindletop its new place in the sun, the field's fresh bid for fame consisted mainly in the making of approximately a dozen new locations by the Yount-Lee Oil Co., the Gulf Production Co., the Rio Bravo Oil Co., and the Sun Oil Co., which among them control virtually all the acreage capable of production in the new development area.

None of the half dozen completions drilled by the Yount-Lee Oil Co., of Beaumont, after its first offside well last December, created any broader interest than to cause the additional locations which are now giving Spindletop its new lease on life.

In Contrast with 1901

THE offside discovery well on the McFaddin tract br ught no special trains from the east, o wild-eyed investors of the type who flocked into Beaumont when the Lucas "gusher" in 1901 turned Texas topsy-turvy and resuited in the founding of the fortunes of more than one of the present major oil companies.

Nor did subsequent completions of the Yount-Lee Oil Co. create any very wide stir, because the wells were important mainly because of the profits they meant to their owners. The Gulf and Sun companies acquired such additional acreage on the south and west sides of the salt dome as the Yount-Lee Oil Co. did not hold, and the Rio Bravo checked over the possibilities of production on the Southern Pacific right-of-way, being itself allied with the railroad.

The Yount-Lee interests drilled a half dozen wells on the McFaddin tract and the Gladys City townsite, which it mainly controls, some of these completions dropping quickly to small per well yields and others holding up better. Then, when it became apparent that the flanks of the Spindletop salt dome might be expected to yield other oil than that being recovered from Yount-Lee acreage, the Gulf, Rio Bravo and Sun companies began drilling.

Gulf Gets Big Well

GULF PRODUCTION CO'S. No. 1 Weed, on an acre tract, on the west side of the dome, is the first offside producing well to be completed at Spindletop by any other than the Yount-Lee Oil Co. It came in the middle of the present week for 125 barrels an hour, producing through two ½-inch chokers at 2824 feet, and was rated good for 3000 barrels daily, initial production.

The Gulf's well came in on the heels of the Yount-Lee Oil Co's. No. 5 Gladys City, making open flow production of 4300 barrels at 2760 feet, and its No. 6 McFaddin, good for 3000 barrels at the approximate depth of the others. Yount-Lee Oil Co.'s No. 1 Davis, good for 4000 barrels daily, was completed within the next 24 hours.

As between drilling wells and locations at Spindletop, the Gulf now has seven; the Yount-Lee Oil Co., four; the Sun Oil Co., two; and the Rio Bravo Oil Co., four. The Sun and Rio Bravo companies each have one well actually drilling.

The combined initial production of the week's four completions at Spindletop, totalling 14,300 barrels, serves to bring yields upward from last week's daily average of 6350 barrels, which included about 1200 barrels of caprock production in the original development area. Yount-Lee production from offside wells drilled since last December had approximated 4000 barrels daily in last week's figures.

Final Yield May Be Doubled

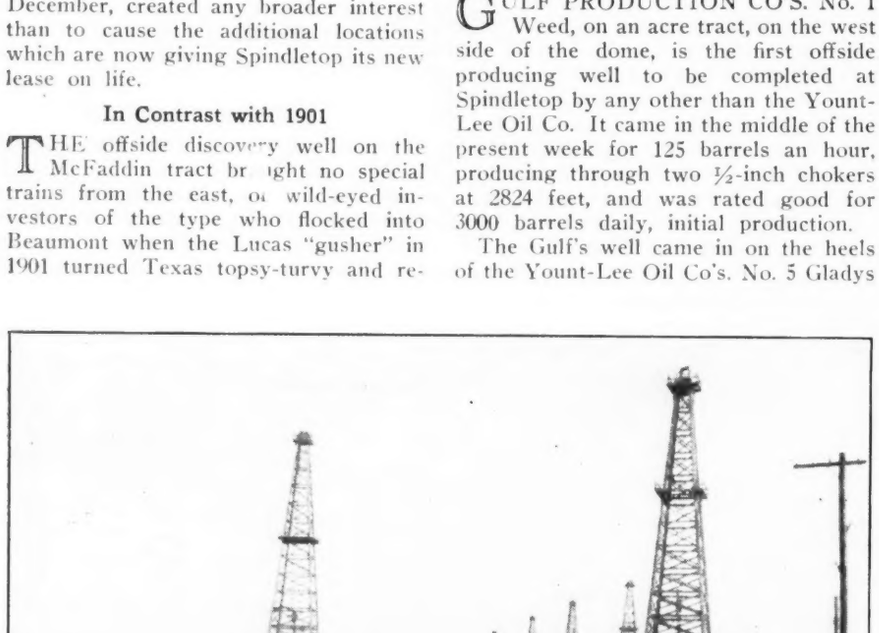
REVIVAL of Spindletop as an important development area may very well result in the field's ultimate production being doubled, as final yields of deep oil conceivably will reach as high as the total recoveries from caprock levels. Total yields from caprock levels at Spindletop from 1901 to date have approximated 49,331,000 barrels given up by approximately 280 acres of proved ground.

Flank production since the offside discovery well was drilled last December has been in excess of 2,000,000 barrels, although detailed recovery figures are not available.

The future of the development area offside the dome may be considered to be in line with the usual performance of satisfactory fields producing from lateral sands on the flanks of Gulf Coastal salt plugs, except that drilling will be confined to less than a half dozen operating companies and production will have no opportunity of reaching proportions similar to the days when Spindletop gave up its great flush oil recoveries from caprock levels.

Spindletop flank production conceivably may reach above the 30,000 barrel daily level at the height of development, depending largely upon whether or not completions are bunched closely together at times. In common with other Gulf Coastal fields, the production chart no doubt will make a "jagged" appearance as flush wells are brought in and older completions drop down to semi-settled levels.

The present development promises important producing results for the handful of operating companies who control the situation and it is of unusual sentimental interest because Spindletop yielded the first "gusher" oil to be found in Texas; but as for its broad effect upon the petroleum industry in terms of daily averages it will mean no more than the development of any other good Gulf Coastal field has meant—quite a contrast to the Spindletop of 1901.



New work at Spindletop on west flank of dome; Gulf Production Co.'s Weed derrick in for-

Gasoline and Benzol Compared As Fuels; Gum and Sulphur Dangers

By T. A. Boyd
General Motors Research Corporation, Dayton, Ohio
Delivered Before Meeting of Society of Automotive Engineers, French Lick, June 4

PRACTICALLY the whole motor-fuel supply of the world comes from five sources, as follows:

(1) The major part of it is distilled directly from petroleum. This amounts, in effect, to screening the finer particles from the complex crude-oil supplied by Nature.

(2) About one-fourth of our American gasoline is made from petroleum oils that are too heavy, that is to say, the particles of which are too large for motor fuel, by splitting the large molecules into smaller ones. This is done by the very simple process of heating the heavy oil to a high temperature and under pressure. In effect, it amounts to the same thing as breaking-up a lump of coal that is too large for the furnace into smaller ones of suitable size. In the case of coal, the "cracking" is done with a hammer, but with oil it must be done by heat.

(3) About one-tenth of the gasoline produced in the United States is separated out of natural gas, a considerable part of which contains gasoline vapor much as the air contains moisture.

(4) From 1 to 2 per cent of the motor fuel used in the United States, and a larger percentage in some of the European countries, consists of benzol and similar material, by-products obtained from coal in the manufacture of coke.

(5) In some sugar-producing localities abroad, to which American automobiles are exported, alcohol made from molasses is being used to a considerable extent as motor fuel.

Service Problems Arising From the Fuel

ORDINARILY, gasoline is a fairly uniform material and one that is reasonably well adapted for use in automobile engines. And so, if the systems through which it is supplied are kept clean, the fuel does not present frequent problems to the service man; but sometimes unusual conditions do arise, which then become all the more serious just for the very reason that they are infrequent.

One undesirable and troublesome characteristic sometimes possessed by cracked gasoline and mixed fuels containing cracked distillates is that occasionally a brown varnish-like resin separates from them in carbureters and manifolds and on intake-valves. The deposit is thickest and toughest on surfaces that are warm during operation, and from which the gum-containing gasoline evaporates, leaving its dissolved varnish behind.

In some cases, the deposit of brown tar becomes so bad that it causes moving parts, such, for example, as throttle-valves and intake-valves, to stick, and so actually prevents operation of the engine. One instance came to my attention some time ago in which the throttle-valve of the carbureter of a fire-engine became so badly gummed up that the frantic firemen could not move it enough to get the engine started at all when the fire-alarm rang wildly in their station.

Poor Refining Infrequent

PRESUMABLY, this gumming occurs only when the cracked distillate has not been properly refined. Fortunately, it happens on occasions that are comparatively infrequent. The problem has been solved by the refiner, for the most part at least, by suitable treatment of the gasoline in the refining process.

But cracking of heavy oils to gasoline is done very extensively in this country now, and rightly so, because the fuel thus produced is essential to the maintenance of our tremendous volume of automotive transportation. Hence, it is not surprising that, on rare occasions, trouble results from some product of the refinery having gone bad.

The formation of resin in a stored gasoline increases with the age of the liquid, and the warmer the place of storage, the more rapid is the increase. Thus, in the case of the infrequently used fire-engine mentioned above, gasoline probably remained in its fuel-tank for months before it was all used. Not only this, but it also stood there at the warm temperature of the engine-house, hot in summer and steam-heated in winter. Certainly, those were ideal conditions for the formation of resinous compounds in the fuel.

We secured a sample of the gasoline from the fuel tank of this ill-fated fire-engine. This liquid is now 4 years old. When first collected, it looked like any other gasoline. The fact that it contained a varnish-like gum in solution could not be known, except by carefully evaporating a sample of it in an open vessel. But now, after having stood in a cabinet in our laboratory for so long, the gum in the liquid has increased until it can no longer all be held in solution, and a considerable pool of resin has separated and collected at the bottom of the bottle.

The air-passages of a carbureter, in another case, became so heavily coated with a dark-brown resin, or tar, left there by the gasoline that had evaporated from it, that a slow stream of tar ran down and out of the open end of the carbureter.

Acetone Will Wash It Off

IN the service station, a coating of this gum can easily be removed from surfaces on which it has been deposited by washing with acetone. Alcohol can be used, but acetone is much more effective. The only means available to the service man for really correcting the trouble, however, in case he should encounter it, is to prevent further deposits of gum by changing the fuel to one that does not leave a resin in the induction passages.

Probably a more common trouble that results from the tendency of gasoline to deposit resins arises in the following manner. A very small quantity of resinous material will separate from almost any gasoline that stands for a long time in the fuel container of a car. Settling there, it binds together such dirt as may come into contact with it. Then, some times if a blended fuel containing benzol or alcohol should happen to be put into the fuel system, this resinous dirt-containing deposit, being somewhat soluble in such liquids, is loosened or dissolved away, setting free at the same time the dirt that it holds. The result is that screens and small openings quickly become clogged with the freed sediment, not because the new fuel itself is undesirable, but simply because it has the property of cleaning out deposits of gum previously made by gasoline. The only remedy for such a condition, of course, is to clean all the dirt from the fuel system in a thorough manner. From the nature of things, the new fuel may usually be relied upon to loosen the dirt, thereby putting it into shape for removal.

Corrosion Resulting From The Fuel

YOUR attention has been called to the fact that a gasoline engine manufactures much water. Sometimes part of this water condenses to a liquid directly in the combustion-chamber, as, for example, during the starting and warming-up of a cold engine. In case an engine should be started from the cold state and then be allowed to fire only a few charges, the inside of its cylinders may remain wet with condensed water. If an engine in that condition be allowed to stand for some time when the temperature is very low, the water in its cylinders may even form ice and freeze the pistons tight.

The cooling-systems of automobile engines are made to take care of hot summer temperatures. They are so adequate, therefore, that during operation on cold winter days and nights, cylinder-walls may for a considerable time remain cold enough to chill water out of the steam-laden products of combustion. During cold weather, too, a little of the water vapor in the burnt gases that blow past the piston into the cool crankcase of some engines condenses out there as a liquid and becomes a menace to polished bearing-surfaces.

In the crankcase or other parts of the engine, water is bad enough in itself, but sometimes it becomes much more of a hazard by having other products of combustion dissolved in it. Nearly all liquid fuels contain a minute quantity of sulphur, some much more than others. During the combustion of the fuel the sulphur burns, too, producing its oxides, sulphur dioxide and sulphur trioxide. For the most part, these burnt products of sulphur are blown away from the engine with the regular exhaust-gas and are harmless. The oxides of sulphur, however, have the property of dissolving readily in water and, when they do so, of forming acids, one of which is the familiar sulphuric acid used in the storage-battery of the car.

Danger From Sulphur

IF an engine happens to be afflicted with the bad combination of water in its cylinders, or its crankcase, and of too high a concentration of sulphur in the fuel upon which it operates, a small portion of the burnt sulphur will dissolve in the water, making a weak acid out of it. The effect of such a situation is much the same as if a small quantity of dilute battery-acid had been thrown into the engine. Whether the familiar saying that water and oil will not mix is true or not, the fact remains that any acid water in the lubricating system of an engine will reach the bearing surfaces by being forced or pumped along with the oil.

A number of wristpins taken from cars run on fuels too high in sulphur show corroded and roughened surfaces.

The ways to correct this situation are three (a) to prevent the condensation or collection of water in the engine, (b) to remove it after it has been formed and (c) to use a fuel that is low in sulphur. Anything that assists in heating the jacket-water quickly and in approximately summer operating-conditions by keeping the powerplant warm helps to prevent condensation of water in the engine. Winter-fronts and jacket-water thermostats are examples of such accessories. In the case of engines not provided with an effective means of keeping water out of the lubrication system, it is advisable to change the oil frequently in winter. Although the service man has no direct control over the fuel that is used in the engines he must service, he can help to prevent the distribution of those high in sulphur by bringing to the attention of the customer and of the purveyors of the fuel he burns, the effects of too much sulphur in motor fuel.

Federal Specification on Sulphur

BY suitable treatment in refining, the sulphur content of motor fuels can be kept low enough for safety in use. The federal specification for government gasoline states that the liquid shall not contain more than 0.1 per cent of sulphur. But some materials sold as motor fuels have been known to contain from seven to eight times this percentage of sulphur.

In what has been said above, it is to be understood, of course, that sulphur in the condition in which it occurs in motor fuels is not acid. It becomes acid in character only after it has been burned in the engine and has come into contact with water in a liquid condition. In the fuel, it occurs in the form of neutral organic compounds, the detection and quantitative determination of which is a highly technical procedure that must be performed by one familiar with that art.

Sulphur is sometimes present in motor fuels, also, in a form directly corrosive to copper and to metals containing copper. In such cases copper strainer-screens are apt to be eaten away or changed into a dark and brittle condition; and other copper or brass parts, such, for example, as those in the carbureter and the vacuum tank, may be corroded or eaten away to a greater or lesser degree. This trouble does not happen often, but when it does occur the only remedy is to change the fuel to one that does not contain sulphur in a form that will corrode copper.

Full of Improper Characteristics

WE do not have very much of the old-time straightrun gasoline these days. The greater part of the motor fuel is made now by mixing liquids from two or more of the five sources already enumerated. For example, much of our American gasoline is made by mixing materials from the first three of the sources mentioned, namely, a liquid distilled directly from petroleum, one made by cracking heavier oils and one extracted from natural gas.

Such a method, when used intelligently as, be it said to the credit of the refiner, nearly always is done, makes a satisfactory motor-fuel. Straight-run gasoline has no advantage peculiar to it alone. So far as behavior in use is concerned, it would not be possible to distinguish between a straight-run gasoline and a mixed fuel made of components in the proper proportions from the first three of the five sources mentioned.

But sometimes persons who distribute gasoline have sold mixtures of liquids not well suited for motor fuel. Such a blend might contain, for example, either a quantity of a too-high-boiling naphtha, or too much of a very volatile material, such as casing-head gasoline. In the first case, the car would be sluggish in operation, because the fuel would not vaporize readily enough. In the second case, the car might be sluggish or erratic in operation, because of gasification of the liquid in the fuel lines and carbureter jets.

Unfortunately, the only reliable means of learning just what the characteristics of a fuel are is to make a laboratory examination of it. The facilities for doing this are not generally available to the service man, of course; consequently, about the only thing he can do is to use his best judgment in the matter.

Gasoline Should Be Uniform

IT would be a very good thing if all gasoline could conform to a universal standard, so far as the volatility characteristics are concerned. This is something that we should have, because it would help much in the design, the operation and the servicing of automobiles. Although the time may not yet be ripe for a universally uniform fuel, the extension of cracking, the process by which a heavy oil difficult to vaporize is broken down into one easy to vaporize, is fast rendering possible the making of motor fuels of uniform volatility everywhere within reasonably close limits. If all motor fuels were of the same volatility, it would help not only the service man but also everyone who drives an automobile.

One valuable contribution that a service man could make to the welfare of automotive transportation is to do what he can toward increasing the number of miles that automobiles can run on 1 gallon of gasoline. Careful surveys have shown that most automobiles use much more fuel than is necessary, even for the flexible operation that American motorists demand. As a matter of fact, a leaner mixture would improve the running qualities of many cars, for some automobile engines are too greatly overfed to give the best operation.

The consequence is that many automobiles get only about two-thirds the mileage from a gallon of gasoline that should be obtained, and some only one-half what they would get if the adjustments with which the car is provided were properly set.

Although such disregard of economy is not at all justifiable, it is not to be expected that automobile owners will show as great concern for the welfare of automotive transportation as should those of us who are devoting our lives to the automobile industry.

Importance of Fuel Conservation

IT is needless to say that the future of the automobile business and the benefits that the automobile confers upon society are dependent upon an adequate supply of liquid fuel. We know that plenty of this valuable material is to be had now, and we have reasonable hopes of a supply for years to come. But, at best, the future is not so certain as the present. Should we not do our utmost to conserve what we know we

have? "A bird in the hand is worth two in the bush."

Considerable money is being spent in the automotive industry today in research on methods of getting more miles per gallon from motor cars; certainly a very desirable and commendable thing to do. But, at the same time, we know that a large gain in miles per gallon could be secured by adjusting cars carefully before they are placed in the hands of the public, and by giving the users a little education on how to drive the cars properly and efficiently. This is a thing that could be done by service departments better than by any other agency.

I am stressing this point, because I believe it to be one of the most important of those presented in this paper. Our use of Nature's valuable fuel is too much like a herd of swine in a corn field, inelegant simile though it may be. We trample down and waste as much as we utilize sometimes. The low price of motor fuel should not blind us to the necessity for safeguarding the very cornerstone of our industry and all that it means to the world. It is not a question of price at all. It is one of inherent value and of security for the future welfare of the greatest transportation-unit ever developed.

It is well known that, when properly refined, benzol makes a good motor-fuel, provided it is also blended with a suitable distillate. One requirement of a good benzol fuel is that the sulphur content must be kept low. Experience has shown that this can be done. Another is that the percentage in which benzol is blended with the petroleum distillate should not be too high for, as is well known, benzol contains a higher ratio of carbon to hydrogen than does gasoline. One gallon of gasoline contains about 1.00 lb. of hydrogen and 5.25 lb. of carbon. But 1 gallon of benzol contains 6.80 lb. of carbon and only 0.55 lb. of hydrogen. The result is that fuels of the benzol type are likely to deposit carbon as such; that is, real fluffy black carbon like lampblack. Perhaps it is lampblack.

Anyone who is familiar with the servicing of automobiles abroad will recall that in Germany and in other places where fuels from coal tars are used extensively, the custom is to clean the spark-plugs often. I do not know just how often this is done; probably every 1000 miles, and certainly every 2000 miles at most. Sparkplugs are cleaned there by shaking them in a little device containing some benzol and provided with wire bristles, which run down between the skirt and the porcelain of the plug during the shaking process. Plugs are cleaned very effectively in this manner. The thing that makes it necessary to clean spark-plugs thus is the fact that one of the principal fuels used is the light oil obtained in the manufacture of coke. This liquid, part of which is benzol, is very high in carbon and throws off a fluffy deposit which, if not attended to, may bridge the gaps of the spark-plugs and cause ignition troubles.

About the best I can say of benzol is that, when refined properly and blended with a suitable petroleum distillate, it is a good fuel. A naphtha having too high a boiling-point must not be used, because the resulting mixture is then unsatisfactory from a volatility standpoint, and it must not be too high in sulphur. Benzol fuels, if the benzol is used in proper concentration, are entirely free from knocking in the ordinary automobile.

Generally speaking, I do not think that the service man is justified in recommending against the use of benzol fuel. Instances have occurred, of course, in which benzol has caused trouble because of being too high in sulphur, but that is also true of gasoline sometimes. Only when corrosion actually results from sulphur in the fuel would the service man be justified in advising a customer not to use any particular benzol-fuel. In this connection, one should not forget, of course, that rusting in engines has resulted just from water produced by the burning gasoline. Benzol ought to be utilized as motor fuel. When properly prepared it is a desirable fuel and augments the supply. As a matter of fact, we may find it necessary to use it some day, if some of the prophets are right in what they say about the depletion of our petroleum reserves.

While we are talking about increased economy from the use of benzol, it should be borne in mind that in present engines this is not a large factor. If we put it on a basis of heat-units, we find that the actual thermal-content of a gallon of benzol is only from 7 to 10 per cent more than that of a gallon of gasoline. Although benzol is heavier than gasoline, it is much lower in hydrogen, which is an element of very high heating-value. A 40-per cent mixture of benzol in gasoline does not then add much to the total heating-value of the fuel. Hence, adjustment of the carbureter, which benzol in the fuel makes possible, is not very great, so far as leaning it down is concerned. The fact is that nearly every carbureter could be adjusted leaner without changing the fuel at all.

After a man has begun to use benzol, he may find that the mixture is so rich that he begins to get fluff carbon, which he did not get from gasoline. The only reason he did not get it before was that gasoline is low in carbon. But the chances are that the mixture was too rich. So, while benzol will allow him to lean the mixture somewhat, it is likely that he could have done nearly the same thing with gasoline alone.

DAYTON, O.—A new service station in the business district here has just been opened by The Refiners Oil Co. The station is equipped with six pumps on a center island without canopy.

Gasoline Production and Demand at New Peak

CLEVELAND, July 3.—New high record in gasoline production, exports and domestic shipments were established in May, Bureau of Mines refinery statistics show, and seem to indicate the June recession in gasoline prices at the refinery was unwarranted. But close observers of the gasoline movement say May shipments were larger than normal because jobbers expected higher prices and tank wagon price advances in June so took in May all the gasoline they could store at the expense of June shipments. These observers say the bureau's June report will not show to so good advantage as the May report. The June report will not be out until Aug. 1.

Daily average production of crude oil was 9000 barrels larger in May than in April, averaging 2,008,968 barrels. The largest gains in production were in Texas and Louisiana outside the Gulf Coast. California production slipped only 900 barrels in the daily average.

Stocks of crude oil east of California slumped for the twelfth consecutive month but a draft on light California crudes was more than offset by a 2,500,000 barrels increase in heavy crude stocks. East of California crude oil stocks stood at 284,009,000 barrels on May 31, compared with 286,208,000 barrels on April 30.

Domestic production of gasoline totaled 1,029,375,000 gallons, a daily average of 33,205,000 gallons. This not only is a record output by American refineries in any month but is the first time refineries have exceeded the billion-gallon mark. Domestic shipments totaled 988,677,000 gallons, a daily average of 31,892,000 gallons, a volume exceeding the previous peak of 31,067,000 gallons last July.

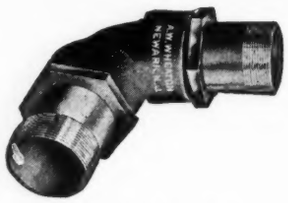
Exports of gasoline totaled 190,224,000 gallons, a daily average of 6,136,000 gallons. This is a new record for a calendar month but the daily average was slightly higher in April, having been 6,163,000 gallons. Gasoline stocks on May 31 amounted to 1,802,101,000 gallons, a decline of 124,000,000 gallons in May.

Kerosene domestic demand and exports decreased while production was accelerated. Stocks consequently increased 15,000,000 gallons.

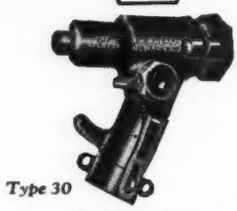
Increased output of lubricants with a decline in export business and steady domestic trade caused an increase of 12,000,000 gallons in lubricating oil stocks.

Stocks of fuel oil east of California increased 45,000,000 gallons. Production was slightly larger than in April, imports were 9,000,000 gallons larger and exports 31,000,000 gallons smaller.

NEWARK, O.—Construction of the two new 2000-barrels Cross cracking units at The Pure Oil Co.'s Heath refinery here has been completed and operations started June 1.



Double Swing Joint



Type 30
Tank Truck Faucet

Single Swing Joint

Type A
Tank Truck Faucet

Type 26
Loading Valve

Type 24
Tank Truck Faucet

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Wheaton

Compilation Of Mid-Continent Refinery Operations

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National Petroleum News

Mid-Continent Refinery Operations Week Ended July 2 (By Telegraph)

	Kansas	%Change Previous Week	Oklahoma	%Change Previous Week	No. & Cent. Texas	%Change Previous Week	No. La.-Ark.	%Change Previous Week	Totals Week Ended July 2	%Change Previous Week	Totals Week Ended June 4
Plants Reporting.....	23		46		41		14		124		124
Daily Cap. (Bbls.)....	98,200		165,900		144,300		51,700		460,100		460,100
Da. Av. Crude Runs..	56,361	— 1.5	98,617	—13.9	62,971	—11.7	41,066	— 0.3	259,015	— 8.9	277,877
Da. Av. Other Oils....	3,238	—62.4	2,819	—38.1	9,069	+81.6	205	.....	15,331	—16.6	18,192
GASOLINE—Gallons											
Stocks June 25.....	11,761,754		38,825,045		17,607,562		5,257,267		73,451,628		73,608,826
Prod. 6-25 to 7-2.....	8,032,472	— 9.4	14,343,444	—13.5	6,899,465	— 7.0	2,977,085	+ 0.9	32,252,466	—10.0	34,839,850
Ship. 6-25 to 7-2.....	10,016,061	+20.2	18,360,946	+ 9.6	7,475,633	— 4.6	3,207,131	— 6.0	39,059,771	+ 7.5	33,897,532
Stocks July 2.....	9,778,165	—16.9	34,807,543	—10.3	17,031,394	— 3.3	5,027,221	— 4.4	66,644,323	— 9.3	74,551,144
Ratio Sales to Prod...	124.7%		128.0%		108.4%		107.7%		121.1%		97.3%
KEROSENE—Gallons											
Stocks June 25.....	3,835,226		8,195,589		2,484,601		1,102,018		15,617,434		8,407,428
Prod. 6-25 to 7-2.....	1,247,064	+ 3.4	1,863,227	—19.4	1,183,505	+ 8.6	564,904	— 0.5	4,858,700	— 6.1	6,472,313
Ship. 6-25 to 7-2.....	1,261,218	+51.8	2,256,858	+54.2	1,300,331	+19.2	559,904	+18.9	5,378,311	+39.5	4,193,803
Stocks July 2.....	3,821,072	— 0.4	7,801,958	— 4.8	2,367,775	— 4.7	1,107,018	+ 0.5	15,097,823	— 3.3	10,685,938
Ratio Sales to Prod...	101.1%		121.1%		109.9%		99.1%		110.7%		64.8%
STOVE DISTILLATE—Gallons											
Stocks June 25.....	2,625,172		2,318,599		470,535		15,918		5,430,224		3,990,331
Prod. 6-25 to 7-2.....	636,634	— 5.9	182,576	—22.3	131,197	—39.9	21,840	+21.5	972,247	—15.3	960,123
Ship. 6-25 to 7-2.....	216,375	—45.6	109,495	—15.3	141,865	+54.9	10,500	—31.6	478,235	—24.5	711,442
Stocks July 2.....	3,045,431	+16.0	2,391,680	+ 3.2	459,867	— 2.3	27,258	+71.2	5,924,236	+ 9.1	4,239,012
Ratio Sales to Prod...	34.0%		60.0%		108.1%		48.1%		49.2%		74.1%
GAS OIL—Gallons											
Stocks June 25.....	8,431,249		35,114,294		4,443,421		1,845,607		49,834,571		53,945,590
Prod. 6-25 to 7-2.....	1,511,089	— 4.7	891,845	+32.5	1,642,979	+106.0	1,252,953	+ 3.2	5,298,866	+24.0	5,068,615
Ship. 6-25 to 7-2.....	2,369,705	— 2.4	1,653,249	+12.2	410,895	— 8.5	1,230,691	—49.0	5,664,540	—16.3	6,204,025
Stocks July 2.....	7,572,633	—10.2	34,352,890	— 2.2	5,675,505	+27.7	1,867,869	+ 1.2	49,468,897	— 0.7	52,810,180
Ratio Sales to Prod...	156.8%		185.4%		25.0%		98.2%		106.9%		122.4%
FUEL OIL—Gallons											
Stocks June 25.....	11,486,545		52,210,988		20,100,999		7,854,105		91,652,637		78,132,608
Prod. 6-25 to 7-2.....	5,016,176	—10.9	8,665,588	—21.1	8,282,234	—11.5	6,344,168	—1 .9	28,308,166	—12.8	30,132,588
Ship. 6-25 to 7-2.....	5,093,979	+ 6.2	6,538,644	—16.9	8,682,201	— 3.6	6,491,892	—10.2	26,806,716	— 7.3	25,800,740
Stocks July 2.....	11,408,742	— 0.7	54,337,932	+ 4.1	19,701,032	— 2.0	7,706,381	— 1.9	93,154,087	+ 1.6	82,464,456
Ratio Sales to Prod...	101.6%		75.5%		104.8%		102.3%		94.7%		85.6%

Gasoline Stocks Cut 6,800,000 Gallons in Week

By Telegraph

TULSA, July 6.

STOCKS of gasoline at 124 Mid-Continent refineries were reduced 6,800,000 gallons the week ended July 2, refiners reported to National Petroleum News. The reduction was the largest reduction this summer.

Shipments of gasoline jumped to 39,059,771 gallons, reaching a new high record for the year while refiners reduced their production 3,600,000 gallons to 32,252,466 gallons. At the rate of shipments during the week the total reserves of 66,644,323 gallons represented only 12 days' supply. At virtually the same group of plants on July 3, 1925, stocks were 65,160,561 gallons, only 1,500,000 gallons below the present level. Crude runs were reduced drastically throughout the field as a result of unsatisfactory markets during recent weeks.

Kansas refiners cut runs 1000 barrels daily average, Oklahoma refiners 16,000 barrels daily average and Texas refiners 8400 barrels daily average. Total reduction in crude runs was 25,300 barrels daily average to an average of 259,015 barrels. Refiners reduced their production of kerosene 300,000 gallons to 4,858,700 gallons. Shipments increased for the first time in several weeks to 5,378,311 gallons, reducing stocks 500,000 gallons to 15,097,823 gallons.

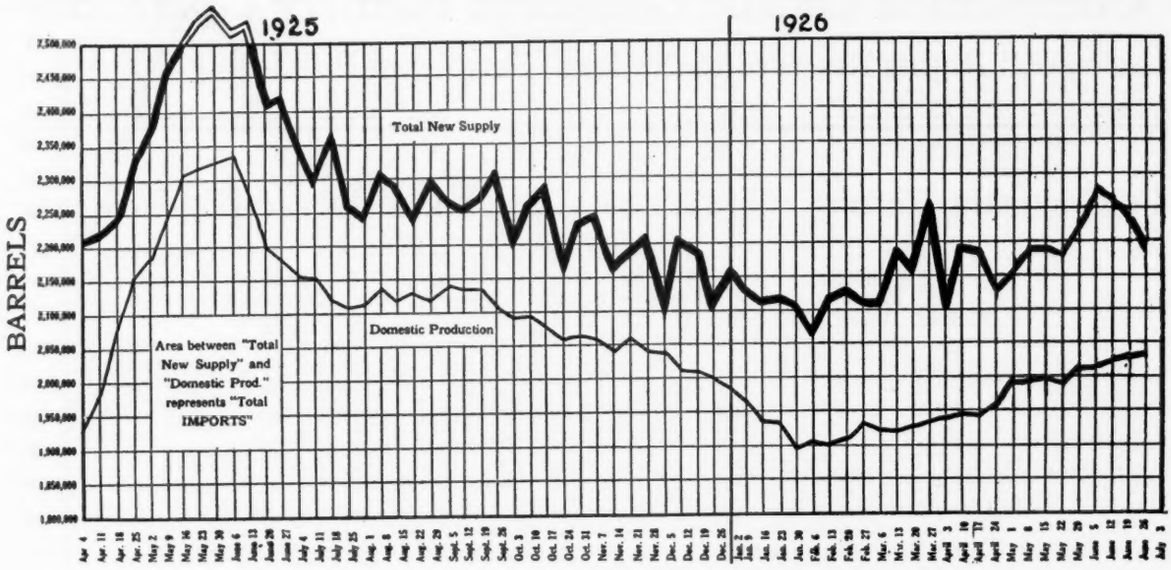
Fuel oil stocks increased 1,500,000 gallons. Gas oil stocks were cut 400,000 gallons. Stove distillate stocks increased 500,000 gallons.

Summary for the Month

Production and shipments, all reporting refineries for four weeks ended July 2. Change in stocks figured from June 4.

	Gallons
Gasoline	
Production	140,009,057
Shipments	147,915,878
Net change in stocks	—7,906,821
Ratio sales to production	105.6%
Kerosene	
Production	21,935,313
Shipments	17,523,428
Net change in stocks	+4,411,885
Ratio sales to production	79.9%
Stove Distillate	
Production	4,434,685
Shipments	2,760,801
Net change in stocks	+1,673,884
Ratio sales to production	62.3%
Gas Oil	
Production	19,841,452
Shipments	23,182,735
Net change in stocks	—3,341,283
Ratio sales to production	116.8%
Fuel Oil	
Production	123,003,276
Shipments	112,313,645
Net change in stocks	+10,689,631
Ratio sales to production	91.3%

Daily Average Crude Oil Production and Imports



Daily average gross crude output of United States, by fields, for week ending with dates given below, as compiled by American Petroleum Institute

OKLAHOMA

	July 3	June 26
North Braman	2,700	2,750
South Braman	10,700	10,250
Blackwell	4,100	4,250
Hubbard	1,850	1,850
Thomas	2,600	2,550
Tonkawa	42,200	43,450
Garber	34,600	35,950
Burbank	44,850	45,000
Osage, outside Burbank	34,400	34,450
Watchorn	2,900	2,900
Cushing	21,700	21,750
Yale Jennings	16,300	15,750
Davenport	9,300	9,750
Bristow-Slick	29,750	29,600
North Okmulgee	17,500	17,600
Lyons-Deaner	4,250	4,250
Stroud	2,200	2,200
Cromwell	17,450	17,350
Papoose	10,650	11,050
Wewoka	29,650	29,950
Duncan district	7,300	7,550
Graham	9,600	9,800
Fox	5,100	4,700
Healdton	14,800	14,950
Hewitt	11,600	11,800
Others	70,400	71,200
Total Oklahoma	458,450	462,650
Decrease		4,200

* * *

KANSAS

	July 3	June 26
Florence-Covert	1,800	1,800
Peabody-Elbing	4,300	4,300
Eldorado-Towanda	14,000	13,850
Augusta-Fox-Bush	5,000	5,000
Rainbow Bend	4,150	4,200
Russell	5,400	5,500
Greenwood County	45,900	45,000
Others	28,700	28,500
Total Kansas	109,350	108,150
Increase		1,200

North Louisiana

Homer	5,700	5,700
Haynesville	9,900	9,950
Caddo, light	10,400	9,800
Caddo, heavy	3,000	2,550
De Soto, Red River	3,800	3,850
Elm Grove	650	650
Bellevue	2,350	2,350
Cotton Valley	8,000	7,900
Urania	16,500	17,500
Total North Louisiana	60,300	60,250
Increase		50

ARKANSAS

Eldorado	7,250	7,250
Smackover, light	16,250	16,400
Smackover, heavy	125,200	123,900
Stephens	1,850	1,900
Nevada	2,600	2,600
Lisbon	10,500	10,400
Total Arkansas	163,650	162,450
Increase		1,200

NORTH TEXAS

	July 3	June 26
Burkburnett	11,900	11,850
Electra	16,400	16,350
Iowa Park and K-M-A	4,600	4,400
Wilbarger	14,400	14,400
Panhandle	52,500	46,000
Petrolia	500	550
Archer County	32,300	32,900
Others	4,400	4,350
Total North Texas	137,000	130,800
Increase		6,200

EAST CENTRAL TEXAS

Mexia	12,400	12,450
Currie	800	800
Richland	1,550	1,550
Corsicana-Poell	29,850	30,100
Wortham	7,450	7,900
Total East Central Texas	52,050	52,800
Decrease		750

WEST CENTRAL TEXAS

Stephens County	11,850	11,900
Eastland County	5,750	5,750
Desdemona	1,750	1,750
Young County	6,800	6,850
Palo Pinto County	450	400
Callahan County	3,700	3,700
Shackelford County	9,650	9,200
Reagan County	31,700	32,100
Others	16,000	12,950
Total West Central Texas	87,650	84,600
Increase		3,050

SOUTHWEST TEXAS

	July 3	June 26
Luling	21,700	21,250
Mirando	9,600	9,300
Somerset	2,000	2,000
Lytton Springs	4,650	4,700
Piedras Pintas	250	250
Others	550	550
Total Southwest Texas	38,750	38,050
Increase		700

GULF COAST

Goose Creek	8,800	8,700
Hull	17,950	16,800
Saratoga	1,400	1,350
Blue Ridge	550	700
Damon Mound	700	750
Batson	1,350	1,350
West Columbia	9,000	9,350
Humble	4,100	4,050
Pierce Junction	1,150	2,050
Sour Lake	5,000	5,150
Spindleton	15,350	6,350
Orange County	9,450	9,950
Edgerly	1,050	800
Evangeline	900	900
Vinton	7,050	7,050
Lockport	5,900	5,900
South Liberty	5,650	5,250
Big Creek	1,050	1,050
Boling	2,500	2,000
Others	2,150	2,150
Total Gulf Coast	101,050	91,650
Increase		9,400

ROCKY MOUNTAIN

Wyoming

	July 3	June 26
Salt Creek	50,800	50,150
Grass Creek	3,100	3,150
Elk Basin	800	850
Big Muddy	3,450	3,500
Lost Soldier	4,500	4,950
Rock River	3,000	2,950
Teapot Dome	1,400	1,100
Others	5,550	5,550
Total Wyoming	72,600	72,200
Increase		400

Montana

Cat Creek	2,850	2,850
Sunburst	25,000	25,000
Others	200	200
Total Montana	28,050	28,050

Colorado

Moffat (Craig)	3,500	3,750
Fort Collins	5,100	5,300
Florence	400	400
Others	300	300
Total Colorado	9,300	9,750
Decrease		450

New Mexico

Artesia	3,000	3,000
Hogback	500	500
Rattlesnake	1,350	750
Total New Mexico	4,850	4,250
Increase		600
Total Rocky Mountain	114,800	114,250
Increase		550

CALIFORNIA

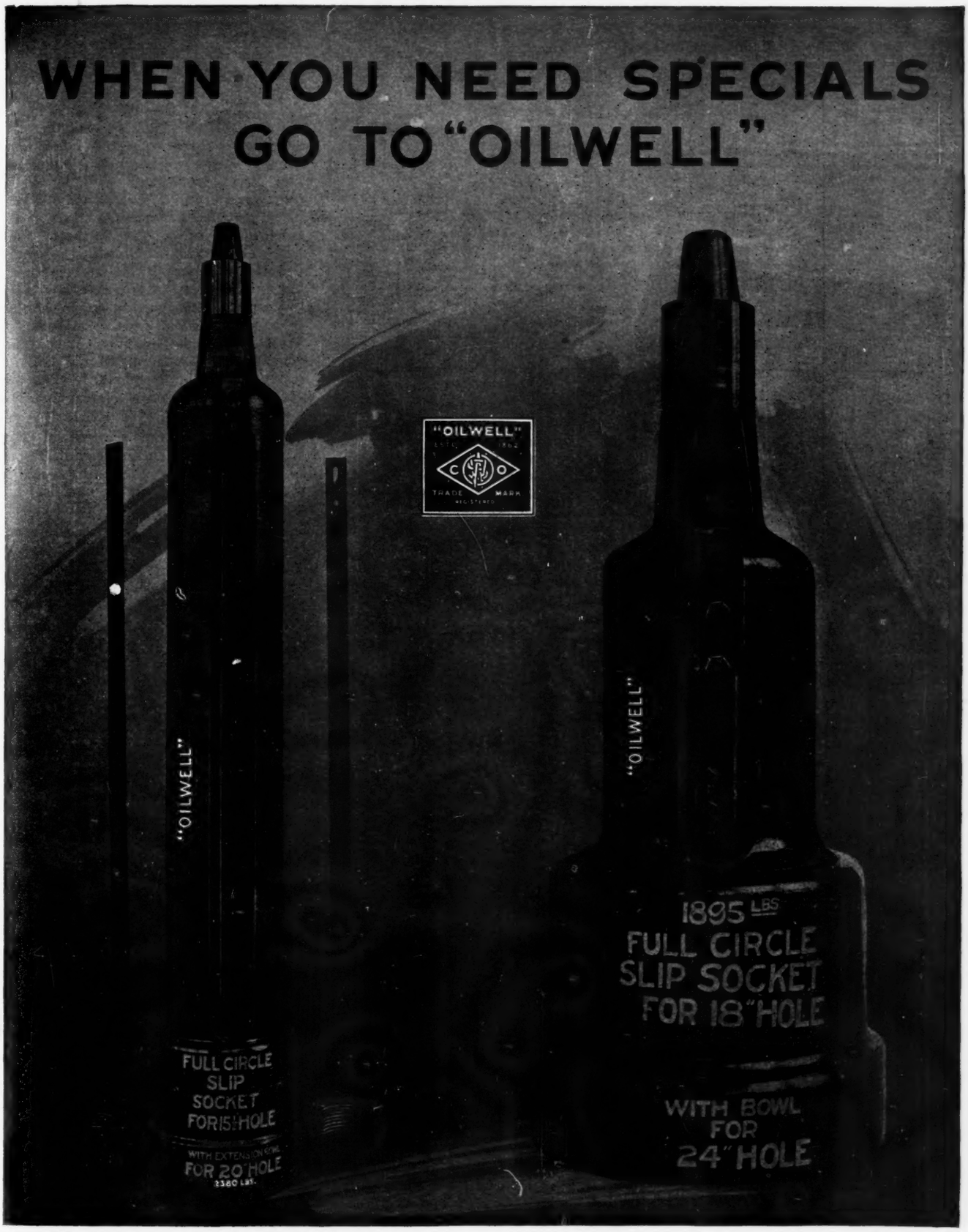
	July 3	June 26
Santa Fe Springs	49,000	49,000
Long Beach	106,500	106,000
Huntington Beach	44,000	43,000
Torrance	29,500	29,000
Dominguez	20,500	20,500
Rosecrans	17,000	17,000
Inglewood	48,000	48,500
Midway-Sunset	94,500	94,500
Ventura Avenue	43,900	45,000
Others	157,500	157,500
Total California	610,400	610,000
Increase		400

EASTERN

(Including Ill., Ind., Ky., Ohio, W. Va., Pa., and N. Y.)	105,000	105,500
Decrease		500

Production Summary

Production east of Rockies	1,428,050	1,411,150
Increase		16,900
Total production in U. S.	2,038,450	2,021,150
Increase		17,300



OIL WELL SUPPLY CO.

NEW YORK—LOS ANGELES—PITTSBURGH, U.S.A.—SAN FRANCISCO—TAMPICO—LONDON

WORLD'S OLDEST AND LARGEST MANUFACTURERS OF OIL FIELD EQUIPMENT

BRANCH STORES IN ALL OIL FIELDS

Los Angeles Water Shipments Week Ended July 3

(Barrels of 42 U. S. Gallons)

	Crude	Gasoline	Fuel Oil	Diesel Oil	Kerosene	All Products
Atlantic Domestic	228,000	150,657	147,137	79,809	.....	606,603
Atlantic Foreign	116,206	201,908	310,140	.....	.....	628,254
Pacific Domestic	461,577	186,199	394,439	.....	.....	1,042,215
Pacific Foreign	42,300	.....	146,145	.....	55,000	243,445
Total shipments week ended July 3, (37 tankers)						2,520,517
Total shipments week ended June 27, (24 tankers)						1,529,428
Total shipments week ended June 19, (16 tankers)						1,222,927
Total shipments for June						6,952,170

Ships Clearing for Atlantic Seaboard

Tanker	Destination	Consignee	Cargo (Bbls.)
Tustem	Philadelphia	Atlantic Refining Co	77,071 Fuel oil
Albert E. Watts	Philadelphia	Sinclair Refining Co	71,066 Fuel oil
Emidio	Baltimore	General Petroleum Corp	74,046 Gasoline
Robert E. Hopkins	Bayonne	Tidwwater Oil Co	76,000 Crude
Chester Sun	Baltimore	Sun Oil Company	79,809 Diesel
H. Folger	Philadelphia	Atlantic Refining Co	76,611 Gasoline
Dixie Arrow	New York	Standard Transportation Co	91,000 Crude
Argon	New York	Standard Transportation Co	62,000 Crude

Laredo Dist. Gas Field Proved for Oil

Staff Special

HOUSTON, July 6.—Tidewater Associated Oil Co.'s discovery of oil in its No. A-2 Webster test in the Carolina-Texas gas field of Webb county has proved the opening of the twelfth pool in the broadly termed Laredo district. Daily production of the district was brought to more than 10,000 barrels by the completion of this well which started off making 63 barrels an hour from a total depth of 2606 feet and is rated as good for at least 1,000 barrels daily initial production.

The Webster well produced 34.2 gravity oil, in comparison with the heavier crude of other Laredo district pools, which generally give their yields at drilling depths from 1600 to 2000 feet.

The Carolina-Texas gas field is about 10 miles north and east of the farthest north oil production previously found along the escarpment which marks the producing area of the Laredo district. As in the case of a number of earlier fields the oil is found on the east side of the previously known heavy gas production.

Hurdle District Gets First Big Wells

Staff Special

HOUSTON, July 5.—Dixie Oil Co., Inc.'s No. 2 Hughes in the William Teel Survey A-806, Upton county, completed at total depth of 2049 feet, is estimated at 2000 to 3000 barrels daily initial production on a partial day's gauge. The well is in the western part of the Hurdle district and is three-fourths of a mile southeast of the Independent Oil & Gas Co.'s Crane county discovery well which still makes 135 barrels daily.

The Dixie well is one location east of its No. 1 Hughes, which was good for about 40 barrels daily. No. 2 is structurally about 50 feet higher than No. 1.

Dixie's No. 2 Hughes sets a new mark for good completions in the Hurdle district which had taken on a new lease of life the past few days because of important wells completed by the Marland Oil Co. of Texas on Burleson acreage about six miles east of the present Dixie completion. Until the Marland wells on the Burleson and the present completion of the Dixie on Hughes land came in the Hurdle district had been small well territory exclusively.

Marland Oil Co. of Texas extended Upton county production a half mile northeast with its Nos. 8 and 5 Burleson wells. The first mentioned well is making 575 barrels daily again after coming in for about 1200 barrels. Twelve miles north of the Independent Oil & Gas Co.'s Crane county discovery and about eight miles south of Magnolia Petroleum Co.'s well on University lands, the Gulf Production Co.'s McElroy test was standing 1000 feet in oil at approximately 2730 feet. The well is in Sec. 203, eastern Crane county.

Sample Bottles Carry The Red Eagle

CHICAGO, July 6.—Four-ounce sample bottles for lubricating oils with the Spread Red Eagle insignia of the Independent Oil Men of America, the merchandising branch of the National Petroleum Marketers Assoc., blown into the side are now being offered members in the national campaign to sell Independent products. Members are urged to use them and point out to customers the connection with the advertising now being carried on in national publications.

A Ford radiator protector in black carrying the Spread Eagle insignia is being offered by the I. O. M. A. for fall delivery.

Toy balloons carrying the eagle were also sold to members in the campaign for use over the Fourth of July.

Gilt enameled buttons with the insignia will be sent to members in the campaign shortly. They are urged to have men in their organization wear them.

Natural Gasoline Makers Hire Research Men

Staff Special

TULSA, July 3.—The Association of Natural Gasoline Manufacturers launched its research and educational campaign this week when it employed Drs. E. H. Leslie and G. G. Brown of the University of Michigan for one year to center their activities on tests of the value of natural gasoline in motor fuels.

Dr. Brown conferred with the educational committee of the association in Tulsa this week. The immediate work to be undertaken was outlined. He has returned to his laboratories at Ann Arbor to prepare for his first lecture of the educational campaign which will be given before the Michigan Independent Oil Men's Association at Mackinac Island on July 16.

In addition to the services of Drs. Brown and Leslie the association has arranged for almost the entire time of four graduate students in chemical engineering at the University of Michigan.

At the outset the engineers will study the action of various motor fuels with reference to combustion, anti-knocking properties, general engine performance, carbon deposition, crankcase dilution, power development, acceleration, and starting.

A. V. Bourque, secretary of the association, announced that subscriptions to the educational and research fund have been coming in rapidly. Enough money has been received to indicate that the program will go through without difficulty. H. A. Trower, Phillips Petroleum Co., is chairman of the special finance committee. Members of the educational committee are: D. E. Buchanan, Chestnut & Smith Corp.; S. C. Carney, Roxana Petroleum Corp.; G. G. Oberfell Phillips Petroleum Co.; L. F. Bayer, Tidal Refining Co.; H. R. Johnson, Akin Gasoline Co., and Mr. Bourque.

To Select New A. O. M. A. Secretary

CHICAGO, July 3.—Directors of the American Oil Man's Association held an informal meeting last week, following the sudden death of H. G. James, secretary and manager of the organization, and decided to name a successor for him and go on with the work. No probable prospect for secretary was suggested. At the board's next executive session, July 16, a man will probably be chosen. The book of oil statistics Mr. James planned to have published soon has been delayed somewhat, but manuscript of subject matter was already prepared and directors plan to have it published this year, dedicating it as a memorial to the author.

WAUCONDA, ILL.—A new service station was opened here on June 10, by E. J. Bridges, handling products of the Standard Oil Co. of Indiana exclusively.

Oklahoma Production Down 4,000 Barrels Due Tonkawa and Garber Decline

By A. F. Hinton
N. P. N. Staff Writer

TULSA, July 6.

OKLAHOMA production declined slightly more than 4000 barrels the past week, principally because of losses recorded by Tonkawa and Garber, accompanied by a general downward tendency of practically all fields in the state.

Tonkawa is still about 6000 barrels higher in output than it was two weeks ago, prior to completion of the Gypsy well in the northwest extension, but can be expected to decline from now until completion of some of the new wells starting up around it and the recent extension well of The Texas Co.

Until that time, Wewoka and Garber are the only sources of materially increased output for Oklahoma from fields now known.

Interest still centers around the new Gypsy well at Tonkawa, in spite of the fact that it has been making considerable water. At last reports the well was making 4245 barrels of oil and about 650 barrels of water daily.

The water is not increasing noticeably, however, and is not cutting the oil, separating from it readily. This well produced 74,829 barrels in its first 12 days, an average of 6231 barrels daily. The last two days of this 12-day period it was producing through a choker, or flow nipple, which is still being used, holding a back pressure of about 150 pounds on the well.

On June 19 the well made 8587 barrels of oil, made over 7000 for the next two days and more than 5000 barrels on each of the succeeding five days.

Big Rush Is On

THE area around the Gypsy and Texas company wells is beginning to take on the appearance of the Tonkawa field proper during the days when a rush of drilling was on early in the exploitation of the deep sand. More than 20 locations have been made in the vicinity, and most of them are now rigs while others already have started on their way down to the deep pay. Gypsy is drilling three wells on its Becker farm in the north half S. W. of 28-25-1 west, on which the discovery well is located. One of these, Number 2, is a quarter mile north of the discovery, and is a southwest diagonal offset to The Texas Co., Number 2 Silver, which was a northwest extension to the field, and came in for 1600 barrels a week before the gypsy well.

Other Companies Active

THE TEXAS CO. is also drilling three wells on the Siler farm. North of the Gypsy Lease. Barnsdall has made three locations on its Liegerot farm. South of the Gypsy Lease, Skelly Oil Co., is drilling its Number 2 Annie Becker, a direct offset to the Gypsy well and has two other wells under way on this lease. Number 1 on this farm is the old Manahan well, which caused a lot of excitement several years ago when drilled as a semi-wildcat extension to the old Tonkawa field. It was taken over by Skelly and drilled down to 3285 feet, where it was abandoned.

One of the new wells now starting for the deep sand will be drilled as a twin to this old dry hole. Wentz Oil Corp. offsets both the Gypsy and The Texas Co. wells, its Number 13 Mahoney lease marked the northwest limit of the deep pay area. T. B. Slick, who was the original discoverer of the Tonkawa deep sand, has made location for his Number 1 Siler, in the southwest corner north half N. E. of section 28, a quarter mile due north of The Texas Co. well.

Empire and Gypsy are preparing to drill their Number 1 Goodson in the NE NW NE of 32, three-quarters of a mile west and a quarter south of thee Gypsy discovery.

Gypsy also has made location for its Number 1 McAninch, in the N.E. N.W. of 33, one location more than a quarter mile south of the discovery well.

For the past week, there were 122 wells producing 32,393 barrels daily, and at the end of the week, the deep sand had produced a total of 32,403,000 barrels, this production was divided by companies as follows:

Amerada seven wells, 1879 barrels. Blackwell Oil & Gas four wells, 203 barrels. Comar, 46 wells, 10,640 barrels. Marland and Mid-Continent, six wells, 1942 barrels, Gypsy, 18 wells, 7525 barrels; McMan Oil Co., one well, five barrels; Pennok Oil Co., seven wells, 170 barrels; Phillips Petroleum, one well, 18 barrels; Slick, six wells, 1407 barrels; Texas Co. 12 wells, 2998 barrels; Wentz Oil Corp., 14 wells, 5606 barrels; one of the recent wells in the Tonkawa field is the Wentz Oil Corp. Number 9 Mahoney, in the SW NE SS of 28-25-1 west, now being completed.

This well had the Wilcox sand from 4259 to 4275 feet. At last reports it was still drilling in sand and was flowing 12 barrels an hour by heads.

In the deep sand area of the Wewoka field, Seminole county, two new wells were brought in late in the week.

Amerada Petroleum Corp. Number 7 Frederick, located in the SWC NE NW of 5-7-8, started off flowing 70 barrels an hour after getting the Wilcox sand at 4183 feet and drilling into it to 4153 feet.

Magnolia Petroleum Co. got to Hunton Lime well in its Number 2 Parker, in the Sec. SW of 32-8-8. It got the lime at 4019 feet. Drilled to 4040 feet, flowed 317 barrels the first 12 hours and is now flowing 40 barrels an hour or at the rate of 960 barrels a day.

One of the best wells of recent weeks in the vicinity of Tulsa was drilled in by the Riverland company in its Number 1-A on the Anderson farm. In the NEC SW NW of 34-19 Tulea County. This well got the Turkey Mountain sand from 2304 to 2308 feet and started off at the rate of one thousand barrels daily.

One interesting feature of the weeks' developments was this discovery of the Wilcox sand in Butler County, Kansas, in a locality remote from other produc-

(Continued on page 55)

Drilling Operations in Oklahoma, Kansas and North Texas

	July 3—Week Ending					June 26				
OKLAHOMA	Loc.	Rigs	Drg.	S.D.	Total	Loc.	Rigs	Drg.	S.D.	Total
Burbank	4	8	41	0	53	...	13	34	...	47
Other Osage	11	20	53	4	88	17	13	51	4	85
Bristow-Cushing	19	20	176	23	238	18	22	172	23	235
North Oklahoma	19	24	231	60	334	14	28	218	62	322
South Oklahoma	22	18	174	47	261	22	24	174	41	261
Muskogee	...	14	56	19	89	...	12	63	22	87
Okmulgee-Bristow	5	48	148	30	231	6	52	139	34	231
Tonkawa	3	8	12	1	24	2	7	5	2	16
Wewoka-Cromwell	19	8	166	26	219	20	12	165	25	222
Total Oklahoma	102	168	1057	210	1537	99	183	1011	213	1506
KANSAS	64	96	263	95	518	61	106	263	97	527
NORTH TEXAS										
Eastland County	...	4	42	6	52	...	5	53	8	66
Stephens County	...	12	28	18	58	...	9	33	14	56
Texas Panhandle	...	185	260	32	477	...	151	242	27	420
Mevia District	...	...	2	2	4	...	...	2	2	4
E. Texas Wildcats	...	6	17	9	32	...	5	16	9	30
W. Texas Wildcats	...	144	304	84	532	...	110	338	79	527
Wichita Falls	...	79	145	41	265	...	72	159	38	269
Total N. Texas	...	430	798	192	1420	...	352	843	177	1372
GRAND TOTAL	166	694	2118	497	3475	160	641	2117	487	3405

Completions in North Louisiana and Arkansas, Week Ending July 1

LOUISIANA

Urania—LaSalle Parish

Company	Well	Location	Depth	Yield
Louisiana Oil Ref. Corp.	Tremont B-5	25–10–1E	1545	50
McGaho et al	Urania No. 1	7–10–2E	1530	30
Nat. Gas & Fuel Corp.	Cockerham No. 1	36–10–1E	1510	100
Nat. Gas & Fuel Corp.	Urania B-5	18–10–2E	1535	65
Nat. Gas & Fuel Corp.	Urania E-4	18–10–2E	1515	20
Nat. Gas & Fuel Corp.	Urania E-8	18–10–2E	1555	s.w.
Nat. Gas & Fuel Corp.	Urania K-4	18–10–2E	1657	s.w.
Standard Oil Co. of La.	Cockerham No. 1	36–10–1E	1604	s.w.

Urania—Grant Parish (Little Creek)

Dowling & McCurry	Holmes No. 1	20– 9–1E	1616	s.w.
Minnesota Oil Corp.	J. M. Cotton No. 1	25– 9–2E	1880	Dry
Montague Oil Co.	Zenoria Lbr. Co. No. 2	11– 9–1E	1500	75
G. W. Weatherbee	Urania No. 1	2– 9–1E	1501	60

Caddo Parish—Caddo Parish

Gulf Refining Co.	Ferry Lake No. 237	16–20–16	2287	50
W. D. Chew	Fee No. 4	33–21–16	1850	40
Lewis Oil Corp.	Raines No. 15	22–21–15	1615	30
Texas Oil Co.	S. P. Harrell No. 52	12–21–16	1980	Dry
Texas Oil Co.	Federal J. B. B-2	16–20–16	2295	20

Bossier Parish—Antrim District

Arkansas Fuel Oil Co.	Murray No. 1	14–23–14	3773	Dry

Claiborne Parish—Homer

Gulf Refining Co.	Len Langston No. 6	19–21 –7	1155	10

Cotton Valley—Webster Parish

Alabama Pet. Co.	Robins B-4	21–21–10	2572	125

East Texas—Panola County

Magnolia Pet. Co.	D.W.Scott No.1 Theo Lawless HRS		1078	5m. gas

ARKANSAS

Stephens County

Company	Well	Location	Depth	Yield
Buffalo Oil Co.	Morgan No. 5	22–15–19	1555	80
Gossett et al.	Davis No. 1	26–15–19	2345	Dry
Gossett et al.	Tomason A-1	22–15–19	1499	s.w.

Lisbon

Allday et al	Murphy No. 2	4–17–16	2165	20
Atlantic Oil Prod. Co.	Goodwin No. 4	16–17–16	2160	75
H. L. Hunt	H. O. Murphy No. 5	4–17–16	2150	15
Magnolia Pet. Co.	Dumas No. 2	9–17–16	2109	65
Magnolia Pet. Co.	Harrell No. 5	4–17–16	2145	125
Nat. Gas & Pet. Co.	Willett No. 2	4–17–16	2135	150
Nat. Gas & Pet. Co.	Willett No. 3	4–17–16	2135	30
Ohio Oil Co.	Goodwin No. 4	21–17–16	2140	35
Rogers et al.	Haney No. 1	11–17–16	3020	s.w.
Reynolds & Marr.	Goodwin No. 2	21–17–16	2142	25
Rovenger Oil Corp.	Harrell No. 3	15–17–16	2160	20
Roxana Pet. Co.	Flournoy No. 6	4–17–16	2130	75
Simms Oil Co.	Killgore No. 1	4–17–16	2170	10
Simms Oil Co.	Perry No. 8	16–17–16	2110	15
Summerfield et al.	Jackson No. 1	17–17–16	2145	2m. gas

Smackover

Ohio Oil Co.	Goodwin No. 8	29–15–15	2608	100
Standard Oil Co. of La.	Murphy B-9	29–15–15	2615	200
Unity Petroleum Co.	Umstead No. 6	33–15–15	2374	s.w.
J. G. Childs	Fee No. 3	8–16–16	2603	75
Federal Pet. Co.	H. B. Murphy No. 3	15–16–15	2608	50
H. L. Hunt	Swilley No. 2	28–16–16	2701	100
C. L. Saxon	Saxon B-1	9–16–16	2675	20
Weiss & Simons	McElroy No. 1	4–16–16	2620	s.w.
Clark & Greer	Robinson No. 3	6–18–15	2145	35

Completions in N. & C. Texas & Panhandle, Week Ending July 3

Archer County

Company	Well Farm	Location Survey	Depth	Initial Prod.
Marland	3-Thomas	N. Thomas	1153–1167	155
Shasta	5-Meade	Meade Past	1424–1448	10
Whitman et al.	1-Ford	Fitzgerald	T.D. 560	Dry
Cosden & Consolidated.	1-Neatherton	ATNC	1705	Dry
Jack Rayzer et al.	2-Parrish	ATNC	1530	Dry
Payne et al.	1-Fitch	ATNC	1150–1152	Dry
Allday O Corpn et al.	2-Hassom	Carson	1513	Dry
Golding & Cochran.	1-Bell	C&P	1125–1133	Dry
Shasta	1-Parsons	EL	1614 T.D.	Dry
Golding et al.	1-Prideaux	IRR	772– 780	Dry

Baylor County

Magnolia	7-Portwood	TE&L	1430–1435	15

Brown County

Louisiana	1-Henslee	Curlong	1270–1281	130
Mendenhall	11-Newton	Miller	1140–1158	10
Valley	1-Teston	Curlong	1228–1261	200
Phillips	4-Dunn	Delgade	1147–1165	40
Phillips	5-Dunn	Delgade	1147–1156	30
Williamson et al.	3-Newton	Mitchell	1210–1245	75
Eastland	1-Harrell	Comal	1681 T.D.	Dry
Curry Moore	2-Prater	Swain	T.D.1338	Dry
J. K. Hughes	1-Wooldridge	Gaines	T.D.1385	Dry
E. L. Smith	2-Graham	Brown	T.D.1174	Dry
Superior	1-Giddings	Cleller	T.D.2404	Dry
Cox & Spratt	1-Riordon	Strange	T.D.1508	Dry
G. B. Mitchem	1-Browder	BBB&C	T.D.1303	Dry
Hughes	12-Arlege	Mitchell	1279–1301	30

Callahan County

J. K. Hughes	1-Freeland	Bostick	T.D.2002	Dry
J. K. Hughes	1-Cutbirth	Smith	T.D.2545	Dry
Slick	1-Bond	Anderson	1392–1395	270

Carson County—Panhandle

Texas	4-Burnett	I&GN	T.D.2945	85

Coleman County

G. P. Micham	1-Green et al	Motch	T.D.1800	Dry

Crane County

Penn Tex	1-Cowden	GC&SD	T.D.3358	Dry

Eastland County

Gulf	3-A Parsons	McLennon	1540–1557	50
Gulf	4 Parsons	McLennon	1226–1233	50
Humble	1-Parsons	McLennon	1225–1244	25
Amax Smith et al.	1-Wright	McLennon	1450–1465	120
Fert Ring	1-Tucker	Howell	T.D.3327	4M
Mook Texas	1-Butler	Halloway	T.D.1502	Dry

Hutchinson County—Panhandle

Gulf	8-Dial	H&OB	2903–2995	235
Phillips	1-Johnson	H&TC	2780–2802	190
Phillips	2-Whittenburg	M&C	2755–2849	1300
Mid-West	1-Smith Capers	M&C	2885–2940	130
McMann	1-Holmes	M&C	2707–2755	500
Cipex	1-Smith	M&C	2872–2930	200
Smith	1-Smith	M&C	2907–2967	15
J. K. Hughes	2-Kingsland	M&C	2924–2974	700
Drysdale	1-Weatherly	M&C	T.D.3156	15M

Irion County

Company	Well Farm	Location Survey	Depth	Initial Prod.
Oklavania	1-Sawyer	H&TC	T.D.2707	Dry

Jack County

Seaboard	1-Gullens	Chairs	T.D.2031	60

Limestone County

Patty Kosse	1-Curry	Land	2505 T.D.	Dry

Montague County

Simon et al.	1-Maddox	Chambliss	865– 891	71
Fleming & Kimball.	1-Howard	Chambliss	1012–1020	35
Gulf	8-Cunningham	Hodges	T.D.1007	52
N. O. & R.	6-Hynds	Wall	894– 938	75
N. O. & R.	8-Hynds	Wall	880– 948	70
Texas	10-Gist	Donohue	860– 863	80
Texhoma	7-Hynds	Wall	957– 966	50
Texhoma	8-Hynds	Wall	924– 942	35

Navarro County

Garland Kent	1-Woolens	Mathews	T.D.2987	1250

Reeves County

World	1-World	Harris	T.D.3768	Dry

Shackelford County

Milham	3-Casey	TE&L	551– 571	12
Humble	5-Cook	ET	T.D.1376	250
Roeser et al.	6-A	Cook	1339–1355	400
Richardson	Iberts		T.D.1810	Dry
Rosier et al.	5-A	Cook	1238–1243	Dry
Rosier et al.	5-B	Cook	1285–1286	Dry
Jackson et al.	1-Flippen	TP	T.D.1316	Dry
Heck et al.	2-Reynolds	TP	T.D.1585	Dry

Stephens County

Phillips	2-Aekin	TE&L	T.D.3203	Dry
Gulf	13-Fincher	TP	T.D.1899	7M
J. R. Eidson	3-Post	TP	T.D.1833-1850	2M
Brown & Co.	1-Norwood	TP	3359	Dry

Ward County

Gulf	1-Hutchinson		T.D.4787	Dry
Chesapeake	1-Marston School Land		T.D.3701	Dry

Wilbarger County

Dyson et al.	3-Waggoner	H&TC	1947–1962	40
Humble	13-Waggoner	H&TC	T.D.1897	35
Phillips	9-Waggoner	H&TC	1896–1910	38
Phillips	1-Waggoner	H&TC	2396–2400	38
Phillips	2-Waggoner	H&TC	2320–2346	35
Humble	7-Waggoner	H&TC	1833–1876	45
Milam	10-Waggoner	H&TC	2330–2334	75
Waggoner	3-Waggoner	H&TC	1905–23	100
Texas	1-Gugginberry	BS&F	T.D.2845	Dry
Magnolia	2-Moore & Waggoner	H&TC	T.D.2708	Dry

Young County

Chenault & Lee	3-Roching	BBB&C	1160–1169	150
Barkley et al.	2-Rogers	TE&L	860– 866	40
Barkley et al.	3-Rogers	TE&L	861– 873	80
Phillips	2-Corbett	West	T.D.4060	Dry
Pace	3-Bernhart	TE&L	T.D.1100	Dry
Reed et al.	2-Jack	Young Co.	555	Dry

Completions in Oklahoma and Kansas, Week Ending July 3

OKLAHOMA

Carter County

Company	Well No.	Location	Depth	Initia Prod.
Magnolia	1	SWc NW 15-2-2W	1132–1156	6
Magnolia	2	NEc SE 16-2-2	1208–1268	3⅝
Merrick et al	1	NEc SE 8-3-2	2671–3037	0
Amerada	15	NEc SE NW 28-5-1E	1117–1164	7
				5

Comanche County

Green et al	1	C NE SW 14-1-12W	1420	Dry

Creek County

				0
Gled	3	SWc SE NW NW 13-19-8E	2390–2410	45
Mid-Continent	25	SWc NW SE 15-17-7	2810–2824	10
Tidal	5	NW NE NW 22-17-7	2937–2959	160
Inter-Ocean et al	4	SWc NE NE 27-17-8	2795–2827	80
Southwestern	2	NWc NE 27-17-8	3123–3131	25
Buckeye Drlg	3	SWc NE NE 1-19-9	1925–1940	10
Hull	2	NWc SE SW 21-18-9	3187–3203	40
Wright	1	NWc SE 24-17-10	2460–2496	355
Wright	8	NEc SE SE NW 24-17-10	2435–2485	400
Shaffer	5	NEc 17-17-11E	2050–2070	30M
Tibbens	29	NW SE 30-15-9	3034–3039	800

Garfield County—Garber

Mid-Continent	17	SEc SW SE 12-22-4W	4556–4597	35
Mid-Continent et al	63	SE NE SE 13-22-4	3026–3036	973
Healdton	6	NW NE 24-22-4	1919–2014	4
Roxanna	3-H	SE SW SW 18-22-3	3589–3608	1132
Roxanna	2-L	NW SW SW 18-22-3	3126–3131	305

Garfield County

Roxana	6	NWc SW 18-22-3W	3085–3118	215
Roxana	8	NEc NW SW 18-22-3	3325–3237	310
Crews Heirs	15	SEc SW SE 19-22-3	2315	Dry
Sinclair	30	NWc NE NW 19-22-3	3031–3048	1885

Grady County

Carter	1	SEc NW SE 21-3-5W	1779–1784	60
McBride et al	1	NEc SW 34-3-5	1358–1362	40
C & O Drlg	1	NE NW NE 24-3-6	2935	Dry
Garvin Drlg	1	SWc NW 5-3-5	2814	Dry

Hughes County

Kingwood	1	NWc SE SE 29-8-9E	3451–3509	135
Amerada	4	NWc SE NW 5-7-8	4147–4159	2325

Jefferson County—Seay

Gypsy	27	SE NE 33-6-5W	1255–1270	110
Simpson et al	1	NEc NW NE 31-6-5	2514	Dry

Kay County

Globe	1	SEc 8-27-1W	3478–3490	12M
Harris et al	3	SE SW 9-27-1	3432–3435	20M
Gypsy	1	SEc NE SW 28-25-1	4270–4283	8587
Texas	2	SWc NE 28-25-1	4280–4292	1864

Lincoln County—Davenport

Mid-Continent	7	SWc SE NW 8-15-6E	4057–4065	607
Magnolia	2	NWc SE SW 3-14-5	3443–3475	40
Magnolia	4	SWc SE NE 4-14-5	3512–3520	10
Magnolia	2	NWc NE SE 10-14-5	3405–3421	105
Flynn et al	1	NWc SE 26-16-5E	4268–4312	Dry

Noble County

Bu Vi Bar	1	NWc SW 28-21-2W	5397–5408	Dry
Ossenbeck & McMann	1	NEc NW 12-21-3E	3510	Dry

Okfuskee County

Robinson	1	NEc NW 10-12-11E	2594–2600	25
Josey	1	NWc 33-12-11	3700–3735	180
Champlin Refg	9	NE SW 22-11-11E	2525–2543	25
Riverland	1	NEc NW NW 30-11-11	2804–2837	15M
Amerada et al	1	NWc SW 18-10-11	3539–3565	258
Independent	14	SEc SW SE 13-11-11	4000	Dry

Okmulgee County

Sheldon	3	SW SW 20-16-12E	2563–2566	25
Devonian	2	SEc 24-16-12	2210–2222	18
Enfisco	4	NW NW 30-16-13	1798–1812	12M
Harsha et al	1	SWc NE 34-16-14	1877–1907	40
Hammond	2	NWc SE NW 35-15-12E	1849–1915	22M
Kistler	1-A	NWc NE NW 3-11-12	2392–2412	50
George	11	SWc NW NE 9-14-14	1240–1252	30
Selby	29	NE NW 35-14-14E	1122–1156	8
Cal Cul	5	NWc SE SW 15-13-14	1103–1123	12
Bright	7	SE NW 25-13-14	1285–1313	25
Lambert	5	NWc NE NW 7-13-15	1973–2012	1.5M
Morgan	5	NEc SE NE 13-11-13	1294–1381	½M
Pine	8	NEc NW NW 18-15-13	2701–2707	Dry
Sauter	5	SE NW 13-14-14	1175	Dry
Reed	1	NEc SE SW 12-14-16	1705	Dry
Cuseck	3	SW NE 29-13-14E	1680–1695	Dry
Viersen	1	NW SW SW 1-12-13	2782–2818	Dry

Osage County—Burbank

Phillips	1	SWc NE 2-27-5E	2895–2937	1382
Peters	4	SW NW NW 17-27-6	2929–2975	573

Osage County

Ross	1	NEc SE SW 10-27-11	1087–1122	3
Oliphant	2	N½ S½ SE 19-25-8E	1127–1138	30
Winona	3	SE SW SW 27-24-10E	1022–1092	25
Skelly et al	7	NWc NE 2-21-8	2370–2494	65
Mitchell	1	SWc NW SW NW 7-21-9	504– 517	30
Continental	5	NW SE SE 29-24-8	2633	Dry
Glenn	1	SWc NW 4-22-10	2410	Dry
Easley et al	1	SE NE NE 34-21-11	1785	Dry

Payne County—Mehan

T. P. C. & O	1	SEc NE SE 22-18-3E	4268–4309	60
T. P. C. & O	2	NEc SE 22-18-3	4305–4327	100

Seminole County

I. T. I. O	2	NEc NW SE 24-9-6E	3991–4014	102
I. T. I. O	1	SWc NE 24-9-6	3935–3973	328
Carter	1	NWc SW 35-9-6	2993–2998	5M
Independent	1	SWc NE SE 7-9-8	3237–3263	100
Phillips	2	NWc SW 8-9-8	3288–3302	26
Southwestern	2	NWc SE NE 18-9-8E	3281–3308	65
Shaffer	2	SEc NE NE 18-9-8	3302–3332	100
I. T. I. O	1	SWc NE 15-8-6	2468–2485	10M
Mid-Continent	1	NWc NE 23-8-7	3197–3208	47
Ramsey	5	SWc SE SE 31-8-8	4181–4192	3487
Magnolia & Atlantic	4	NWc NE NE 6-7-8	4105–4108	1220
Magnolia	3	NEc SE NE 15-8-7E	3217–3220	Dry

Tulsa County

Kewanee O & G	17	NE NW 4-16-13	2075–3200	2400
W. E. Brown	1	NWc SE 23-19-10E	2465–2746	Dry
Holmes & Gledden	1	NE SW 9-19-11	2335–2393	Dry
F. A. Best	2	SWc SE NW 33-18-14	1503–1540	Dry

Wagoner County

Sevreda	2	SWc NE SW 21-17-16E	1018–1030	20
Harris et al	1	SWc NW NE 36-16-17E	840– 860	2½M
Mays Bros. et al	1-A	SWc SE SE 19-19-16	627	Dry

KANSAS

Butler County

White Eagle	5	NW NW SE 27-26-7E	2115–2136	25
Farr et al	1	SW SE SE 13-28-6	2840	Dry
Amerada	7	NE SW NW 27-27-7	2705–51	100
Mid-Kansas	3	SE SW SW 36-22-9	2458–83	135
Smith & Ash	1	SE SW SE 34-29-4E	2950	Dry

Chautauqua County

Robinson et al	1	SE SE SW 21-32-10E	2160	Dry
Prairie	1	NEc NW SE 20-34-9	1770	11

Cowley County

Lewis	8	NW NE SW 31-30-4E	2954–97	385
Hull	3	NE SW NW 24-32-4	2980–3015	25
Phillips	1	NE NE NE 16-34-5	3253	Dry

Elk County

Theta	2	NE NE SW 3-30-12E	1629–38	⅛M
Gillespie	4	SE NE SE 22-31-10	1641–50	20
Theta	3	NE SW SW 23-31-10	1608–18	20

Greenwood County

Syndicate	1	SE SE SE 2-22-10E	2013–2088	240
Davis et al	18	SW NW SE 12-22-10	2107–2169	150
Empire	13	NW SE SE 11-22-11	1824–1889	200
Mid-Continent	10	NE SW SW 18-22-11	2046–2071	65
Phillips	8	NWc SW 33-22-11	1897–1937	65
Empire	2	NE SW SE 4-22-12	1782–1824	450
Sheedy et al	8	NE SW NW 11-23-9E	2315–2347	130
Simmons et al	8	SE NW SE 4-22-12E	1802–1833	150
Mid-Continent	9	E½ W½ SW 15-23-13	1651–1657	15
Lassen et al	1	SW SW SE 6-25-9	2130–2150	25
Mid-Kansas	14	S½ S½ SE 19-25-9	2352–2417	100
Mid-Kansas	9	SWc NW NW NW 20-25-9	2395–2447	70
Loy et al	1	NW SW NE 15-24-11	2013	Dry
Owen-Osage	1	SE SW SW 9-28-11	1926	Dry

Kingman County

Carter	2	NE NE SE 16-27-7W	3850–3889	70
T. B. Slick	1	NW NW SW 15-27-7	4215	Dry

Lane County

Richards Ref	1	S½ 11-18-27	3725	Dry

Lyon County

McCollough et al	1	SEc SW SE SW 24-21-10E	2320–2330	200
Trans-Cont	4	NW SE SW 30-21-10	2199–2271	150
Ramsey et al	1	SW SW NE 21-16-10	2692	Dry
Abel, Finney	1	SW SW SW 11-18-12	2030	Dry
Double A	1	SW SE SW 20-18-13	2320	Dry
Watchorn O & G	1	SW SW NE 21-18-13	2493–2500	Dry
Sheedy et al	1	NW NW SE 7-21-10	2420	Dry
Trans-Cont	1	SW SW SE 30-21-10	2720	Dry
Trans-Cont	4	SE SW NW 31-21-10E	2102–2164	60

Osborn County

Beasley	1	NE NE NE 10-7-12W	3035	Dry

Rice County

Wilcox	1	SWc NE 35-20-6W	3417	Dry

Russell County

Snowden et al	3	SW NE SW 32-11-15E	2876–2884	200
Valerius	2	NE NW SW 17-12-15W	3017–27	120

Sedgwick County

Chastain & Chastain	1	NW NW SE 7-27-1E	3145	Dry

Sumner County

Phillips & Roxana	1	NE NE SW 17-32-2	3615–3660	775

Woodson County

Blevens et al	1	SW NW SE 19-25-15E	1550	Dr

(Continued from page 51)

tion in that horizon. The well making this discovery was the Phillips Petroleum Co., Number 1 Reynolds, in the SW NW of 16-27-6, near the town of Leon. It topped the Wilcox sand at 3130 feet and at nine feet in, swabbed 800 barrels in 24 hours, and has not yet been completed. The hole filled up 2500 feet with oil as the sand was penetrated but did not flow. This is an old hole drilled deeper, it having been completed more than a year ago in the top of the lime at 2910 feet. It started off making about 12 barrels a day and has been gradually declining until it was recently decided to deepen it for general results.

In the Garber field several new wells were drilled in during the week but not in time to prevent the field from showing

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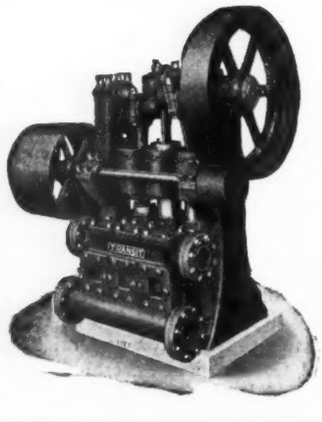

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a production decline of about 1400 barrels.

One of the new wells was the Roxana Petroleum Corp., Number 2-T on the Schroeder farm, in the northwest corner SW SW of 28-23-3 west. This well made 1400 barrels the first 24 hours in sand from 3591 to 3629 feet. Sinclair Oil & Gas Co. was not so fortunate in its Number 56 North Walker, located in the NE of 13-22-22-4 west. This well got the Tonkawa sand at 3120 feet and when drilled to 1355 feet made 225 barrels of oil and 350 barrels of water in the first 24 hours. Sinclair also was getting a well in its north 48 on this farm, in the northwest corner SE NE of 13. At eight feet in the Tonkawa sand topped at 3092 feet, this well was making 15 barrels of oil an hour with a large amount of gas.

During the past week, there were 105 wells producing in the various deep sands at Garber, with average daily production of 29,800 barrels. In addition to this oil production, they were also making more than 22,000 barrels of water daily. Sinclair, with 57 wells, had 16,555 barrels production, far in the lead of other companies. Roxana was next, with 26 wells making 10,583 barrels a day. Mid-Continent and Marland had 13 wells making 2477 barrels. All others had seven wells making 185 barrels.

In the deep rock field, Payne county, Empire Gas & Fuel Co., got a good well in its Number 3 Liston, in the northwest corner of section 26-18-3. This well got the sand from 4318 to 4326 feet and produced 450 barrels of 43 gravity oil the first 24 hours.

Deep Rock Oil & Refining Co. a Shaffer subsidiary, has a well making 33,000,000 feet of gas in its Number 4 Shannon, in the SE SW of 23-18-3. Also in the Deep Rock field. This well is drilling at 4280 feet and has had gas from 4229 feet down. The same company's Number 3 on this farm has been drilled to 4251 feet and is held up with a fishing job. It got the gas sand at 4200 feet and is also making more than 30 million feet of gas. The Deep Rock field now has 37 wells with daily average production of 3293 barrels the past week. Shaffer and Deep Rock together have 21 wells producing 1366 barrels, Empire has two wells making 804 barrels and Amerada has four wells making 390 barrels daily.

New Jobber Seeks Oils

MINTO, N. D.—The Minto Oil Co. was organized here around the first of June to deal in oils and greases. It is operating a bulk station with 60,000 gallons storage and two trucks. Up to the latter part of June, the company had made no connections with any oil company for its products.

The company was organized by Dick Langowski, of Minto; E. F. Colwell Park River, N. D.; and E. Edgar, Fergus Falls, Minn.

Difficulties of Oil Producing Told in A. P. I. Campaign

NEW YORK, July 6

GASOLINE and a former cowboy share equal honors in "A New Romance of the Grand Canyon," which is another contribution recently released to newspapers as part of the publicity campaign now being carried on by the American Petroleum Institute. It was written by Judson C. Welliver, director of the committee on public relations. The first installment in this campaign, which was published in the April 21 issue of National Petroleum News, revealed to the public an idea as to what the motorists of the country are doing for the construction and maintenance of good roads throughout the country, and the large expenditures they are making yearly through gasoline and other taxes for this purpose.

This first article was printed as a full page feature in 240 daily papers, representing every state in the United States, and it was also used in over 2950 weekly papers, representing nearly every county in the country.

This latest article is an attempt to present to the public some idea of the difficulties associated with the opening up of a new field, and the vast amount of money, time and effort that must be expended in the search for new fields and more oil, by telling of the handicaps met in drilling within the Canyon in Utah.

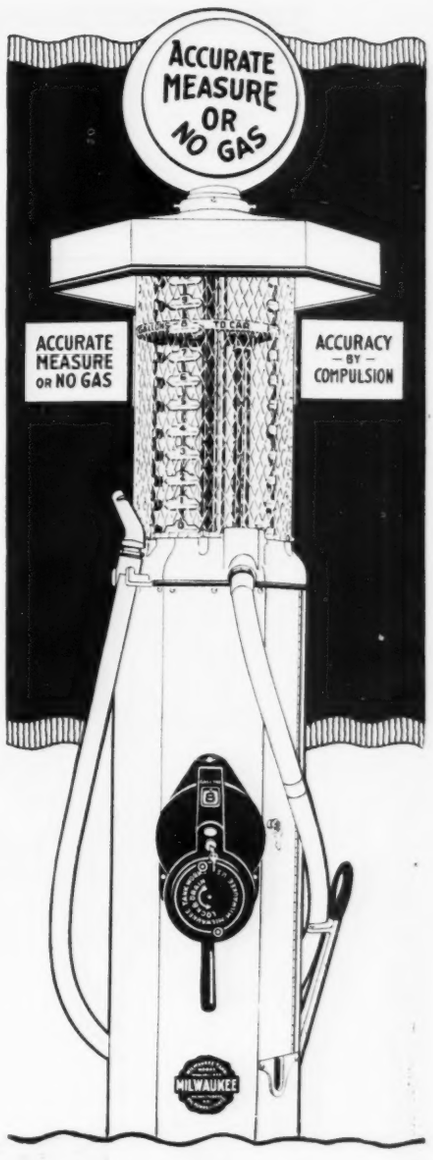
The first trip to be made through this imposing natural wonder was by John Wesley Powell, which trip has since become one of the classics of exploration. When it was still believed impossible to ever open a trail from the canyon's rim to the river a mile below, a young and daring fisherman and cowboy, Ralph Cameron, set to work, and for 10 years almost without help or financial backing succeeded in building what is today known as the Bright Angel trail. Mr. Cameron now represents Arizona in the U. S. Senate at Washington.

Now comes the oil industry's wildcatter, continually seeking additional sources of petroleum to meet growing demands, who enters the canyon, transports his supplies by boat or over the ice in winter, from Moab down the Colorado River to location and sets up a rig on a shelf of rock near the water's edge.

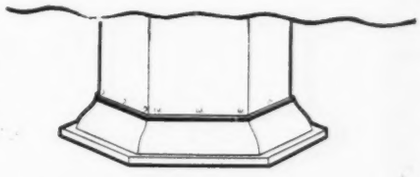
That many difficult obstacles attend petroleum exploration and development work as well as great financial hazards, has been proven time and again the article goes on to show. An estimate by large oil companies recently showed that in the past 12½ years, about $1,200,000,000 were sunk in wells which produced no oil or none in commercial quantities. "Despite every effort of geological science, skillful engineering and long experience to direct drilling operations into promising areas, and notwithstanding the stupendous depths now reached, 25 per cent of wells in this country last year were dry," this story states.

Characterizing the wildcatter as the Columbus of oil, or as being to gasoline and to the fuel supply of this country's 20,000,000 automobiles, what the old-time gold prospector was to the far west, the story points them out as tirelessly searching in many parts of the world for the oil which today furnishes the best transportation by land, sea and air; which helps to light homes and streets, provides an astonishing share of its power, and furnishes an endless list of necessaries which are by-products.

Two Phillips Petroleum Co. men caught in the act of scouting the Marland river-bed location in Huchinson county, Texas Panhandle. Left to right, they are W. H. (Bill) Clark, petroleum engineer, and Claud Hildebrand, scout and land man.



Exceeds Sealers' Requirements



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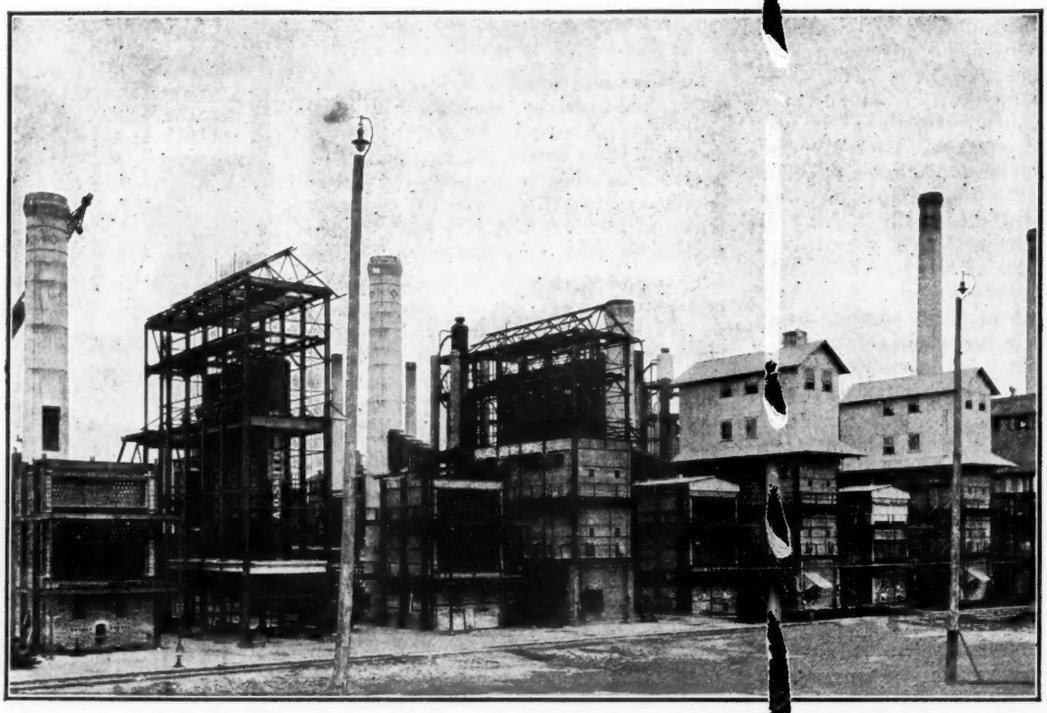

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Short Cuts in Lease Operation Keep Costs to Low Figure

By Lawrence E. Smith
N. P. N. Staff Writer

MARIETTA, O.

BEGINNING in a small way in 1912 with a commercial installation of compressor equipment on the Cumberland Oil Co. property near Chesterhill Morgan county, O., the several interests usually referred to as the Smith & Dunn group expanded in application of pressure to oil sands. Other operators adopted the method and today, in all the southeastern Ohio district, embracing fields of Morgan, Noble, Washington, Monroe and a little of Belmont counties probably 90 per cent of the productive acreage is under artificial pressure.

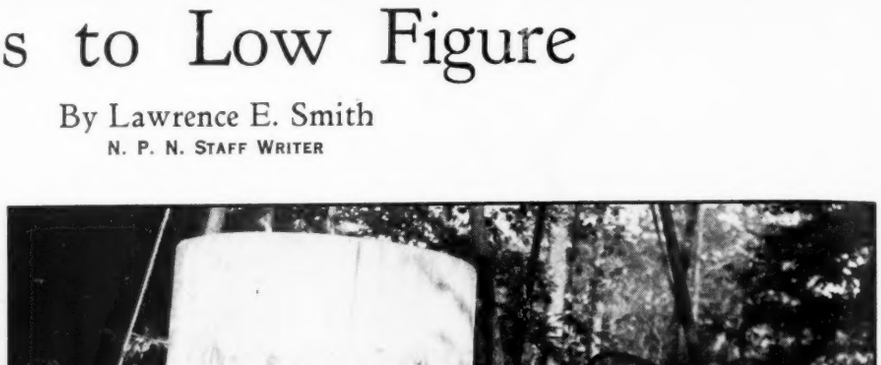
Of the practitioners of this method, the 17 organizations of the Smith, Dunn and associates' group constitute the largest in southeastern Ohio. The next largest operator under this method in Ohio is the Henderson Oil Co., which has been applying compressed air to the sands for a number of years. There are then a large number of other companies that have obtained noteworthy results by restoring pressure.

There are hundreds of wells in the Marietta district which are being operated today that were in line for abandonment years ago under orthodox methods of producing. It has appeared to the writer that some of the operating methods connected with producing oil in a territory whose productive history is old and whose virgin pressure was long ago exhausted are of interest inasmuch as there is a constantly growing appreciation of methods for restoring pressure to sands.

Not a Flashy Performance

SPECTACULAR increases in daily production in such fields are not generally had. There are, of course, many instances where certain wells following the application of air to the sand increase their daily output by several hundred per cent. Taking a property as a whole, or a group of properties and averaging the results, it is usually found that the important economic results are gained in prolongation of the life of the field with enough current increase in output to effect a lower per-barrel cost of recovery and thus afford worth while profits.

The successful operator in the Marietta district today is one who has trained his vision upon the reduction of operating expenses. It was by no means sufficient to put pressure on the sand and disregard the dollars that can be dissipated through careless management. Reduction of labor costs, of all forms of overhead, of general maintenance in an apparently depleted pool have to be held to a rigid minimum else what is gained in increasing production and prolonging the life of a lease will be nullified. Hence, there are certain outstanding features in the daily operation of many Marietta district properties that well may command the attention of any oil producer.



From this sump, on the Pennsville Oil Co. property, these automatic pumps lift water to storage from where it flows by gravity to the three large engines in the compressor plant. The rapidity of pump operation depends upon the rate at which the fluid chamber fills and so much water is required at this plant that it requires almost a continuous lift of the two pumps.

Many of the properties in this district that are today yielding suitable return on investment and operating costs could have been bought a few years ago for a not overly tuneful song. They are profitable because of a combination of good housekeeping and stimulation of recoveries.

Assume that an operator travels to Marietta for the first time to see at first hand how they produce oil in that district. Since he has heard so much of Smith & Dunn, he probably will go to their offices. He may expect to find several rooms full of office workers and a half-dozen vice-presidents, all in conference. Like as not he will decide when he gets there that it is a holiday. Only three persons are regular occupants of the offices, Orton C. Dunn, Harvey E. Smith and Miss Verda Stegner. The two men, like as not, will be attending to interests outside the office or they may be out of the state. As a starting point, it will be noted that office maintenance is not the most elaborate factor in the business.

Probably the visitor will find Mr. Dunn on the point of setting out for the field and he will be invited to go along. Perhaps the first stop after the one at the store where Mr. Dunn gets a day's supply of those deadly-looking cigars he affects, will be made at the Marion Oil Co. property, southeast of Marietta. He may be somewhat disappointed when he first sees it.

For this is by no means an outstanding example of how a lease should look. For one thing, it is used by the operators as a sort of catch-all for equipment that may be used sometime. Included in a pile of miscellaneous junk are tubing elevators of an obsolete pattern, a drilling stem of a size used in the '70's, along with tools and fittings of modern design and size. It is all spread out together and much of it may work its way into the general scheme sometime or other. Many of the men on other leases know it is there and if they can use it, they help themselves.

NEARBY is a compressor plant. It is not of modern design nor is it typical of the plants on other properties of the same management. The visitor will note presently, as he continues his visit, that other properties are far different in appearance than the Marion. The others are orderly in appearance, buildings usually are of steel and ground is free from loose equipment.

The visitor then, must look farther than the appearance of the Marion property to find the answer as to why it is operated at all. He will find the key in the cheapness of operation. For the year 1925, the cash outlay on this property totalled $2,311.09. And of that total, $1,200 went to the one man on the property.

The foregoing figures do not include taxes, the portion of overhead allotted to this property, depletion or depreciation. The latter item, however, would have small mention in a complete accounting, for by the usual rules, much of the equipment is theoretically not in existence—it was depreciated off the face of the earth years ago.

The property consists of 432 acres on which there are 69 wells, exclusive of wells used as air intakes. The cost for operating each oil well, to divide it that way, was about $33.50 for the year. True the wells average not more than one-tenth of a barrel per day, but the direct lifting cost would figure out much more than one-fourth of the realization from the oil, which is highly satisfactory in any pumping field.

The division of expenditures on the Marion property for 1925 was as follows:

Pumping labor	$600.00
Misc. field labor	215.00
Misc. field expense	474.40
Teaming	64.00
Lubrication	189.71
Operating Comp. plant	600.00
Comp. maintenance	61.06
Pump equip. maintenance	106.92
	$2,311.09

In this a division is made between pumping labor and operation of compressor plant, but one man was paid both the amounts.

This property is equipped with a 95 H. P. Miller engine and an Ingersoll-Rand Imperial Type 10 compressor, two stage, with 14-inch stroke, delivering air at pressure of 325 pounds per square inch.

Many Costs Avoided

NOTE the low cost charged to maintenance of pumping equipment. This property, like nearly all the others owned by this group of operators, is pumped by compressed air in the manner described in the June 30 issue of National Petroleum News. Each well is equipped with an air lift and flows its production. Hence, there are no rod jobs or cup replacements. There are no pull rods to keep in condition or powers to maintain. The duties of the one man on the property are to maintain the plant, keep it lubricated, turn the valves at the wells and flow the oil. He also takes care of the tankage. He requires help from the construction men of this group of companies only on installing new equipment and repair work on plant and other lease installations. The engine is equipped in the manner described in the preceding article so that it shuts itself down when trouble develops.

Production on this lease is from the Goose Run sand, found at depths of 200 to 500 feet, according to topography. The sand is fairly loose and some cleaning out of the wells is required. This is always done with compressed air.

Three miles from the Marion plant is the compressor plant on the Alice Oil Co. property, under the same management. Here the company has not imposed on the pumper by throwing all the scrap into his yard. The two plants are so connected with air lines that if one of them is shut down, the other will supply air for the operation of both properties. One part of the Alice lease is two and one-half miles from the compressor, making it five and one-half miles from the plant on the Marion, hence at times air has been delivered that distance to flow wells while the Alice plant was undergoing repairs. Production on this lease comes from the Mitchell sand, found at 470 to 600 feet below surface.

On this property there are 65 wells on 414 acres. The cost of operation for 1925 shows that the figures set forth for the Marion property are not unusual.

Pumping labor	$480.00
Misc. field labor	260.00
Misc. field expense	220.37
Teaming	46.00
Lubrication	122.76
Shooting	21.00
Operating Compressor plant	480.00
Compressor maintenance	37.55
Pumping equip. maintenance	3.31
	$1,670.99

This represents an average of $25.70 per oil well operated.

System is Simplified

BESIDES the engineering that has been done on the properties of this group to make the leases as nearly self-operating as possible, the system of organization has also been reduced to the utmost in simplicity. There has been a de-centralization of authority wherever possible—each man has been charged with certain duties and the only reports he renders are verbal ones, except for statements on oil produced.

Automatic type air pump is here used for transferring oil from the tank within the building to another tank which is connected to pipe line gathering system. This is on the property of the Alice Oil Co.

Long ago, on the majority of the properties of this group, the operators passed through the stage of taking periodical well gauges. Most of the production has reached the point that detailed well records are not required. The new drilling is negligible, it is known definitely enough what the production of a lease should be and it is felt that the taking of individual gauges and the maintenance of such records would entail far more expense than the information would be worth. Each pumper who has handled a lease for any length of time is pretty good at noting mentally whether a well has made its average production and he knows when one requires attention. This is particularly true of wells pumped by the newer type of air lifts which require the adjustment of valves each time. The pumper turns on the air in such wells and stays close by until all the fluid has gone into the tank. Wells that are pumped with the automatic lifts which function when the fluid reaches a certain height are not so easy to check as to daily production, but the lease production is a close enough index for practical purposes.

This is not discounting in any way the value of individual well records, generally. The performance of wells on these properties was noted for years after the air was applied to the sand and the records were highly important in working out the best method of applying the air. The properties are now so settled as to production that such expense has been eliminated.

The organization is not long on titles. Here and there, on a property too large for one man to handle, or at a large plant such as the one on the Pennsville Oil Co. in Morgan county where two 120 horsepower and one 75 horsepower compressors are under the same roof, one man will be in charge and will have one or two helpers. Properties of the Pennsville Oil Co. total 1081 acres and the plant is supplying air to the sand and is operating 186 oil wells, so, despite the automatic shut down features there is sufficient responsibility on it to demand that a man be within close distance all the time.

Men Carefully Selected

MANY of the properties, however, have only one man regularly assigned to duty and he is left pretty free to work out his own destiny. New men are required from time to time for responsible places, these are obtained by promoting someone who has been trained in the operating methods and a newcomer is assigned to duty as helper. Not every new man that is put on is retained; the success of the system which delegates so much responsibility depends not only upon the intelligence of the men but upon their being "self-starters" in every respect.

There are, of course, many employes other than pumpers in the organization. The total number at this time is about 260, but this includes the employes in Pennsylvania and West Virginia some of whom are located on properties not owned but operated under one or another of the arrangements between the Dunn-Lewis Oil Recovery Corp. and the owners. In some cases they assume complete operating management of the property and in others they act as consultants.

Some of the employes are styled construction men, whose duties are rather broadly inclusive of many construction and mechanical engineering projects. There are also the truck drivers, teamsters, gasoline plant men, etc.

One of the radical departures of these operators is in warehousing of material. No stocks are carried on the lease and no great amount in Marietta. An engine-compressor manufacturer whose equipment is standard for this organization maintains in the combination shop-garage-warehouse in Marietta a stock of replacement parts for his engines. These are checked out as required and charged to the company that draws them.

Self Operating Warehouse

HERE again is informality carried to extraordinary length. This shop, etc., is located back of Mr. Dunn's residence. It is a two-story structure and before the days of automobiles was a stable. It is large enough to serve as garage for several cars, to give room for small shops containing drill press, lathe, threading machine and the usual shop tools. It also houses a gasoline pump connected to a 160-gallon storage tank.

There is no one in charge of this building. When one of the lease men needs a fitting or an engine replacement part or anything else from the small stock that is carried, he drives in and gets it. He merely writes on a card the name of the article he is taking away, signs his name and company's name, leaves the card in a box on the wall and goes about his business. Mr. Dunn takes up these cards when he gets his car out to drive to the office and they are entered on the records pertaining to the various companies and charged to its operating expense. The rule is that no man shall take out more material than he has use for, hence there is no surplus at any lease. Supplies of hardware not carried in this small stock are purchased from the supply companies as needed.

Another unusual feature is the maintenance of a common fund for the purchase of gasoline, oil, tires and parts for automobiles. From time to time an assessment is made against all the companies, according to a plan which experience has shown to be the correct proportion for each to bear. This is styled the "truck account." It is replenished when it gets low and that plan gets away from more bookkeeping. Gasoline, oil and tires are supplied to the men for their own cars when used in company service and no charge is made against the various companies except through the periodical assessment.

A great deal of the shop work is done by the men in this combination garage, etc. Cars are serviced by the owners or the drivers as much as is possible.

Minimum of Office Work

IN the general office all possible detail is spared, as is shown by the fact that Miss Stenger handles the records for the 17 companies. In keeping the accounts, a check register is used for each company. At the first of each month all labor bills and any others on hand from the previous month are paid, using an enclosed type of check on the back of which are listed the date and amount of the bill. The original bill is attached to the voucher and these are retained in the files, giving a complete record for reference at any time.

The checks and vouchers are numbered, certain series being assigned to each company and the checks are entered in the check register consecutively, being further keyed by the use of classification of account numbers. This classification is as follows:

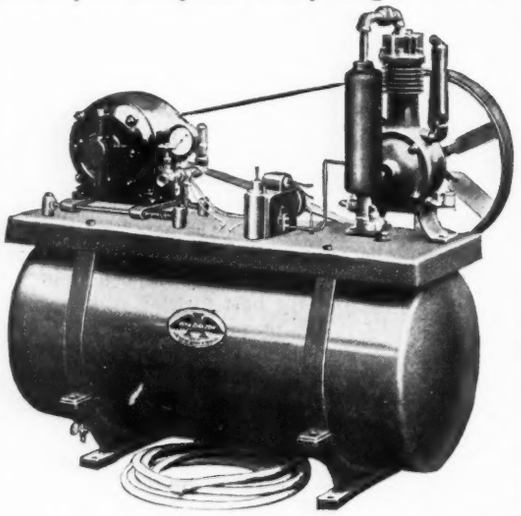
CLASSIFICATION OF ACCOUNTS

Operating Expenses

1.....Drilling Wells—Labor
2.....Pumping Labor

The Greatest Value Yet

Here's a Dayton Air Compressor that will give you all the service you need in an average station. Has a capacity of 2½ cub. ft. per minute. Pumps to 140 lbs. pressure. Works without trouble of any kind, and costs you complete, ready to go **$160**



You cannot beat the

DAYTON E-2

even though you pay more for the same capacity.

Start it, oil it occasionally, and you can forget about repairs. Nothing to get out of order.

Automatic Spring Tension Take-up on belt.

Compressor building is our specialty and the demand keeps us busy. 25 styles, 7 types to choose from.

The LUCAS PUMP & TOOL COMPANY DAYTON, OHIO.

DAYTON AIR COMPRESSORS

425 Valley St. Dayton, Ohio

Type L-2 15x50x11 ft.

There are 70 Different Types of Permanent

Shepard Stations

QUICK DELIVERY
READY FOR QUICK ERECTION
BY YOUR OWN MEN

Wire Collect For Catalogue

Arthur B. Shepard Corporation
Architects and Manufacturers
11 Broadway **New York**

3.....Cleaning Wells—Labor
4.....Miscellaneous Field Labor
5.....Pulling Wells
6.....Cleaning Wells—Material
7.....Miscellaneous Field Expense
8.....Teaming
9.....Coal
10.....Lubrication
11.....Shooting
12.....Well Rentals
13.....Oil Purchase
14.....Operating Gasoline Plant
15..... " Compressor Plant

Maintenance

16.....Maintenance Wells
17..... " Compressors
18..... " Engine & Powers
19..... " Pump Equipment
20..... " Piping System
21..... " Storage Tanks
22..... " Gasoline Plant
23..... " Lease Rentals

General Expense

25.....Salaries of Officers
26.....Accounting Department
27.....Office Sundries & Traveling Expense (Auto Expense).
28.....Rent
29.....Insurance
30.....Legal Expense
31.....Taxes
32.....Interest.

Additional to Property New Only

50.....Real Estate
51.....Leases
52.....Buildings
53.....New Material
54.....Compressor
55.....Engines & Powers
56.....Pump Equipment
57.....Gasoline Plant.

Oil sales and any other credits for each company are entered. When these have been entered and bills have been paid, the account is closed for the month and a recapitulation made, following the classification system. In this way it shows at a glance how much has been spent each month for labor, maintenance, teaming, general expense, etc.

On the first of each month the bank statements are received and these are reconciled with the register, the reconciliation being entered on the same page as the rest of the month's work.

The other principal record in the office is the ledger in which are entered the totals for each company monthly.

Thus, in the office as in the field, labor has been reduced over a period of years to the utmost. Short-cuts have been taken wherever possible to get to the desired result—the operation of the properties at minimum cost and maximum production. Yet, check the system from end to end, and it is found that nothing is missing and no information that is required in a hurry that cannot be obtained immediately, unless it would be the production yesterday of some well. Even here, Mr. Dunn will be able to dig out of a file of his own, a card which has been made up some recent date by the pumper that will show what that well did at that time. He does not consider that he keeps systematic records of each well except in the sense that several of them are carried under one tank number, but he does send around these cards once in a while, chiefly to reveal any trouble that should be attended to.

University Gives Davison Honorary Degree

George Stewart Davison

PITTSBURGH

GEORGE STEWART DAVISON, president of the Gulf Refining Co. and also president of the American Society of Civil Engineers, was honored on June 9 when the honorary degree of Bachelor of Science was conferred upon him by the University of Pittsburgh.

Mr. Davison is one of the rather few high executives in the oil industry who is a man of scientific education.

One of the greatest assets that a scientifically trained man—an engineer—can bring to the oil industry is a disciplined and straight thinking mind, in the opinion of Mr. Davison.

And in making this statement he hastens to point out that he does not mean in any way to minimize the enormously valuable work that has been done and is being done by scientific men for all branches of the oil business in their own specialized technical fields.

In fact, Mr. Davison has an unusually sympathetic attitude toward the technical man whatever his special field because he is one himself. He was educated as a civil engineer and followed this profession for a considerable time before he even thought of entering the oil industry.

"When I was a young man, going to school and even later, when I was engaged as an engineer, I had no idea I would ever be in the oil business," says Mr. Davison. "As a matter of fact, when I did enter it, it was not in the capacity of an engineer but of an executive."

While his whole career as an oil man has been as an executive and he has never done any technical work in petroleum, his scientific training has made him keenly alive to the valuable aid science and scientific men could render to the industry. For that reason, the Gulf Refining Co. was employing and profiting by the work of technical men at a time when a large part of the oil industry was depending on rule of thumb practical methods and viewed the young graduate of a technical school who sought a place in the industry with indifference if not with suspicion.

Imperial Oil Ltd. Builds Annex on Famous Gaol Site

HERE IN COURT HOUSE SQUARE STOOD THE COURT HOUSE OF T TOWN OF
YORK THE CORNER STONE OF WHICH WAS LAID O THE TWE -FOURTH
OF APRIL MDCCCXXIV BY MAJOR-GENERAL SIR PEREGRIN MAITLAND
K C B LIEUTENANT-GOVERNOR OF THE PRO CE O UPPER C ADA
HERE WITHIN THE PRECINCTS
STOOD THE PUBLIC
OF APRIL
LAID ON THE TWE
COL HENRY COCKS
OR OF THE PROVINCE

Scene at the laying of the cornerstone of the new addition to the Imperial Oil Bldg., at Toronto, Canada. In the picture are, from left to right, Mrs. Henry Cockshutt, Col. Henry Cockshutt, LL.D., lieutenant-governorof Ontario, who laid the cornerstone, C. O. Stillman, president of the Imperial Oil Co., Ltd., Toronto, and Justice Riddell, standing in front of the microphone.

TORONTO, July 3.—On the site of gallows and gaol, which 102 years ago held forth for the administration of justice to criminals, was laid on May 24 the one-ton cornerstone of the new addition to the seven-story Imperial Oil building on Church and King streets here. Where once stood the court house of the town of York in 1824, when the population of that town was not quite 1700, now stands the modern structure which is the headquarters of the Imperial Oil Co., Ltd., in a town of more than 600,000 inhabitants.

Fitting ceremonies marked the laying of the cornerstone of the annex. In charge of proceedings was John A. Pearson, president of the Ontario Association of Architects. C. O. Stillman, president of the Imperial, offered to representatiyes of the Canadian Historical Association the privilege of marking the site, after which Chief Justice Sir William Mulock, on behalf of the association, asked Col. Henry Cockshutt, LL.D., lieutenant-governor of Ontario, to lay the stone.

Justice Riddell, the speaker of the occasion, described the old gaol site as a "famous corner," according to the May number of the "Imperial Oil Review," and related briefly historical facts and events which had taken place there.

New Chairman Elected For Committee D-2

CLEVELAND, July 3.—The tentative method for viscosity of petroleum products and lubricants (D88-25T) was advanced to standard subject to letter ballot of the society at the meeting of Committee D-2 of the American Society for Testing Materials held June 21 to 25 at Atlantic City. The meeting of Committee D-2 was in connection with the annual meeting of the society.

Two new standards were proposed to be adopted as tentative standards, these being method of test for burning quality of mineral colza oil and method of test for the determination of the thermal value of fuel oil. Revision of six existing tentative standards was proposed, these being: Method of test for penetration of grease (D217-25T) Method of test for analysis of grease (D128-24T) Method of test for sulfur in naphthas and illuminating oils (D90-24T) Method of test for distillation of gasoline, naphtha, kerosene and similar petroleum (D86-25T) Method of test for neutralization number of petroleum products and lubricants (D188-25T) Method of test for burning quality of long time burning oil for railway use (D219-25T).

The following officers were elected: Chairman, F. A. Hull, General Electric Co., succeeding C. P. Van Gundy, Baltimore & Ohio Railroad; Vice Chairman, K. G. Mackenzie, The Texas Co. (re-elected), Secretary, R. P. Anderson, American Petroleum Institute (re-elected). Members of the advisory subcommittee were elected as follows: J. T. B. Bowles, Crown Central Petroleum Corp., (reelected) T. G. Delbridge, Atlantic Refining Co., E. N. Hurlburt, Taylor Instrument Co., (re-elected), Frederick Kenney, Central Testing Laboratory, New York, Charles A. Lunn, Consolidated Gas Co., New York (re-elected), J. B. Rather, Standard Oil Co. of New York, (re-elected).

Air and Gravity Used to Move all Oils; Simple Device Saves Gauging Time

ELYRIA, July 6

AIR and gravity are the forces used to move the gasoline and oils that pass through the bulk plant of Corts & Kohn in Elyria, who are distributors in this region for the Hickok Producing Co., Toledo.

Tank cars are unloaded by gravity through 700-foot pipe lines, and tank trucks are loaded on a level higher than the storage tanks by putting 15 pounds air pressure on the gasoline and kerosene storage tanks. The lift is about 15 feet from the storage tank to the loading rack.

Lubricating oils are forced from underground storage tanks to canning and barreling racks in the warehouse with air.

At the Hickok service station adjoining the Corts & Kohn bulk plant air is used for many purposes. The gasoline pumps are all air operated. Air is used for greasing at the pits and an air gun is used for spraying the springs of cars.

CORTS & KOHN have six 10,000 gallon tanks for gasoline and kerosene housed in a low corrugated metal building. Keeping the tanks under cover virtually eliminates evaporation, W. S. Kohn says. The tanks rest on concrete cradles set on a cinder floor. Two four-foot glass gauges are installed in one end of each tank, which is eight feet in diameter. Beside these are placed scales graduated in gallons so that an accurate gauging of the contents of each tank may be quickly made without use of a stick. The two four-foot gauges are used instead of one eight-foot gauge, because breakage is greater with a glass tube as long as eight-feet.

Each tank is equipped with two vents, with vent lines leading from about the center of each tank to the outside building. A 2-inch line is screened at the end and a smaller line is equipped with a safety valve set to open at slightly more than 15 pounds. A hand operated valve is installed in the larger line.

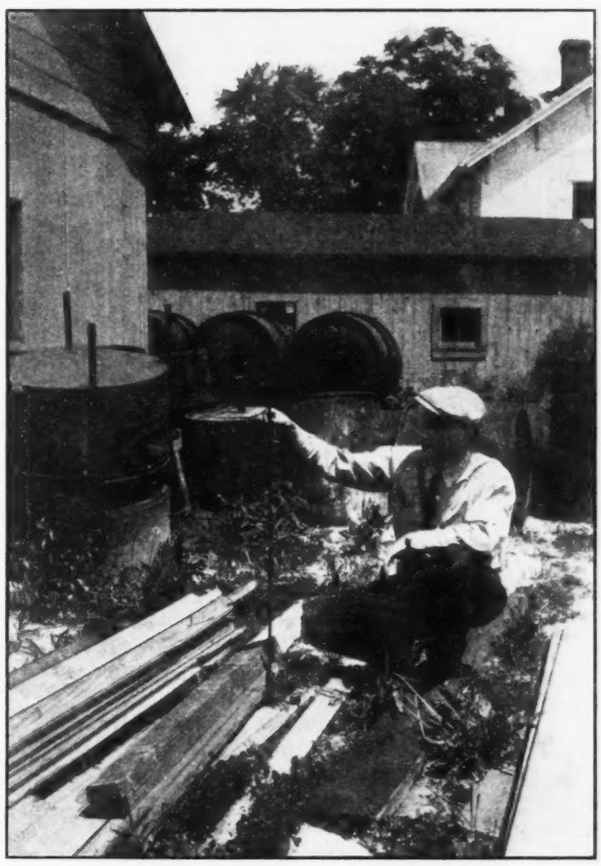
When a tank is being filled, the hand valve is opened and the air pressure released. The air in the tank expelled by the inflowing gasoline or kerosene, passes out through the larger line. When the tank is filled, the hand valve is closed and about 15 pounds of air is put on the tank. This is sufficient to force the gasoline or kerosene to the loading rack.

Lines to the loading rack are set four inches above the bottom of each tank so that any moisture that condenses will settle there. The tank bottoms are pumped out periodically.

PUSH TRUCK GREASING

A DISCOUNT off regular charges for greasing is made to trucks which are serviced regularly at the Corts & Kohn service stations in Elyria. This company found that a truck that was gone over regularly, sometimes once a week, could be greased in a much shorter time because there has been little chance for the bearings to gum up; and this saving of time has been passed on to customers to build up this business.

Truck customers have specified times to come to the greasing station. In some cases men from the station go to the garage in slack times and bring the truck to the station and return it.



W. S. Kohn, Corts & Kohn, Elyria, O., gauging contents of lube tank with simple home-made gauge described above.

THERE are three lines from the unloading rack for tank cars to the storage tanks. A 3-inch line is used for gasoline, a 2-inch line for kerosene and a 1-inch line for air. All lines are approximately 700 feet long. Unloading is done by gravity and the air is used solely to clear the lines of gasoline or kerosene after a tank car has been emptied. The gasoline line holds about 225 gallons.

Three of the storage tanks are used for Hi-Speed gasoline, the Hickok company's competitive grade. Two are used for Aviation gasoline, its premium grade, and one for kerosene.

The indoor tanks are painted black once each year and the building as well as all bulk station buildings are painted a slate gray.

Lubricating oils are received in drums but stored in 1000-gallon underground tanks. The drums are emptied into funnel ended lines which run inside the warehouse to the tanks underground back of it. Hand valves are installed in the lines so that when a tank is filled the fill line may be closed and air applied for lifting the oil to the can and barrel filling rack. There are five underground tanks for motor oils and one for alcohol.

Gauge in Each Tank

AN unusual gauge system is used on the lubricating oil tanks. A gauge maintained in each tank. The gauge consists of a galvanized iron float in which is fastened a brass tube with outside diameter of about ½ inch. The tube rides in an iron pipe which is screwed tightly into the top of the storage tank and which rises about six inches above the level of the ground. The iron pipe is kept capped except when the tank is being filled or a gauge taken. The brass tube is graduated in barrels. When the tank is empty the top of the tube is flush with the top of the iron pipe. It rises as the oil flows in.

In installing a new tank the float and brass tube are put into the tank before the iron pipe, which serves also as a vent during filling, is screwed into the tank top. The iron pipe is put in place, and care taken that the top of the brass tube is flush with the top of the iron pipe. A barrel of oil is then emptied into the tank through the fill pipe, which, as noted before, leads from the warehouse. A mark is filed on the brass tube at the

bore at the top of the iron pipe. Another barrel is then emptied into the tank and another mark filed on the brass tube. This is continued until the tank is filled. Care is taken to see that each barrel actually contains 50 gallons.

After the brass tube has been calibrated all that is necessary to gauge any tank is to turn off the air valve, remove the cap from the top of the iron pipe, and the gauge rises from the hole. The reading is taken at the level of the top of the iron pipe. Of course, it is necessary to have a gauge for each tank.

Gauges on Station Tanks

SIMILAR gauges are used by the Hickok Producing Co. at all its service stations in northern and west central Ohio. Only the calibrations differ. Gasoline gauges are graduated to represent gallons. A notch is filed in the brass tube for each 10 gallons and a ring is filed around the tube at each 100 gallons. It is much simpler to open a vent, let the gauge bob up, count the rings from the top down, and then the 10-gallon marks from the last ring to the top of the vent pipe, than to run a stick into the tank and compute the gallonage.

Corts & Kohn serve eight Hickok service stations. The stations are operated by managers employed by the Hickok company under a system which makes the job far more attractive than the usual service station job. The managers must "deliver the goods" or get out.

Deliveries of gasoline are almost entirely truck loads. One of the hauls is from Elyria into Lakewood, a residential suburb of Cleveland, a distance of approximately 18 miles.

The Hickok stations served by Corts & Kohn sell only gasoline, kerosene, alcohol in winter, for oiling and greasing services. A feature is made of oiling and greasing and several pits are to be found at every station.

Enclosed Oiling Rack

ONE of the stations in Elyria is on a lot which adjoins the Corts & Kohn bulk plant. It is managed by W. J. Bartlett. It has three pits in the station yard, two for passenger cars and one for trucks. Two pits are enclosed in a house and these are used almost exclusively in winter for passenger car and service. They really are only half pits, because the pits are shallow, about 3 feet deep and racks similar to any ordinary wooden rack.

The building is big enough to allow plenty of working space for two oiling and greasing crews around each rack. It has windows on three sides and large doors on the fourth. It is lined and ceiled with a composition board, but is not heated.

Changing of crankcase oil is done without charge, so is transmission and differential greasing, the only cost to the car owner being the oil and grease used.

Price of chassis greasing varies. For a Ford it is 50 cents; for Overland or Chevrolet 75 cents; Essex, Dodge and similar cars $1, and larger cars $1.25 and $1.50. Greasing of truck chassis costs up to $2.50, unless the job is done regularly in which case discounts may be allowed.

A truck that is greased regularly once a week in most cases has clean bearings. Little time is required to do the greasing because there has been no chance for the bearings to gum up. It is not necessary to remove a shackle or king bolts at an expense of 15 or 20 minutes' time. Regular truck customers have specified times to come during the week. If it is impossible to come at the set time, Mr. Bartlett or his head oil and grease man arrange a time for the job. The time might be in the evening and if business were not too rushing at the service station, someone would go to the customer's garage, get the truck, take it to the station, oil and grease it, and return it to the garage.

SPRINGS are oiled free with every change of crankcase oil. A mixture of new lubricating oil and kerosene is used as a spray, the kerosene being used to cut any rust. On each greasing job, the transmission, differential, universal joints, and clutches of certain cars, are inspected and the owner told if these need attention.

Crankcase drainings are collected by Corts & Kohn and sent to Toledo where they are used as fuel at the main plant of the Hickok company.

Another feature of the service stations is the installation of automatic tire air towers. These towers attract many motorists because it is needless to use a small hand gauge which most motorists don't carry. Cleanliness is another feature, and not the least.

Clean, Courteous and Circumspect Station Men Make Friends

"I 'M sorry to have delayed you," said the service station salesman at a Hi-Speed station in a northern Ohio city when the writer drew into it for gasoline recently. The delay had been less than a minute but the courteous attitude of this man was not unusual. It was like that at several other stations of the Hickok Producing Co. The manager of another station came out to the air tower when the writer pulled up to it and assisted in the inflating process.

If a car pulls over an oiling pit and the oil and grease man may be in another pit, some one at the station tells the customer that the man will be with him in a moment. The oil and grease man is called and he will remove the plug from the car of the latest customer and let the crankcase drain while he is completing his first job.

Everything is done to make the automobile owner feel that the station owners and attendants are taking personal interest in him. The car owner is greeted with a smile and pleasant word; his possible needs are inquired into without making the suggestion offensive, and he is sent on his way with a parting farewell that makes him feel he has been well dealt with and the station men will be glad to see him back.

Overalls and hands are as clean as may be expected on persons that have to work around automobiles. Of course, the man that works the pits, accumulates considerable grime but the men at the pumps and those that put a quart of oil in your crankcase, most times at their suggestion, or fill your radiator, cannot be complained of.

The station salesrooms are neat and orderly, and the grounds are kept free of dirt, papers and other things that make a station look dowdy.

Jenkins Process Company Adds To Its Force

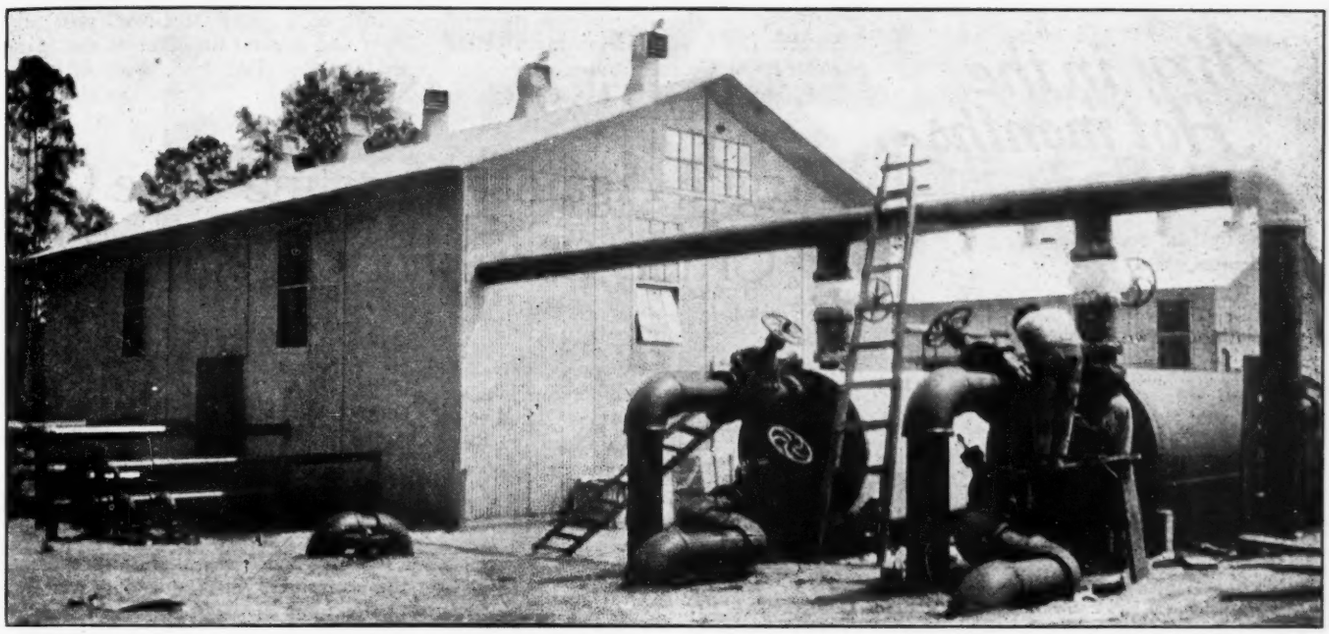
Staff Special

CHICAGO, July 3.—Officials of the Jenkins Petroleum Process Co., recently announced two important additions to their staff. One is an accountant and the other a petroleum chemist. J. J. McKeague, formerly of the staff of Ernst & Ernst, now has charge of the accounting for Jenkins and Eugene P. Brown, who came from the Standard Oil Co. of Indiana, is in charge of the department of chemical research.

Mr. McKeague is a University of Wisconsin man whose experience with Ernst & Ernst has been extensively in the corporation tax line. Mr. Brown is a graduate of the University of Virginia. Before joining the Standard Oil Co.'s staff at Whiting he was associated with Federal Dye Stuff & Chemical Co. of Kingsport, Tenn. During the war he was in the chemical warfare service but joined the Standard Oil Co. early in 1919.

With the Jenkins Petroleum Process Co., Mr. Brown carries the title of assistant to the president, W. C. Black. Jenkins Petroleum Process Co., has no research laboratory at 844 Rush St., where the headquarters office is, but extensive research is conducted in the plants of license holders and it is contemplated that an experimental plant will be built at the new Bartles-Maguire refinery in East Chicago.

CALMAR, IA.—The Tri-Star Oil Co. has just completed its warehouse here.



Close-up of heaters utilizing exhaust steam to economically transport Smackover crude, as used at pumping stations of Standard Pipeline Co., Inc.,

Heat Smackover Crude in Pipeline

EL DORADO, ARK., July 3

HEATERS working at low pressure and using exhaust steam at pipeline pumping stations in South Arkansas have solved the problem of transporting Smackover crude for the Standard Pipeline Co., Inc., companion corporation of the Standard Oil Co. of Louisiana.

Delivery stations on the Standard's 95-mile system from Smackover to Grand Lake, Ark., on the Mississippi river, are equiped with tubular heaters of the 2-pass National Transit type, which keep the 10-inch line working at maximum capacity of 42,000 to 45,000 barrels daily, except in extreme winter temperatures.

The company was unable to transport more than 8000 barrels of Smackover heavy crude daily through an 8-inch pipeline at the beginning of development in the field a few years ago.

Seven Pumping Stations

THE seven delivery stations on the Standard's present Smackover pipeline are approximately 13 to 14 miles apart, at Smackover, Richie, Strong, Felsenthal, Crossett, Parkdale and Wilmot, their locations being fairly uniform, notwithstanding the swamps and rivers crossed. The eastern half of the line passes through the Mississippi delta and the western part through the foothills extending away from the Ozarks.

With the pipeline pumping stations this close together it has been found that heat losses are not sufficient to make necessary intermediate heating of the oil except in the short period when extreme winter conditions prevail. Then intermediate heaters are installed at points half way between stations.

Heating is accomplished here under main line pressure by breaking up the stream through a multitude of small coils passed through steam. The intermediate heaters are of the Standard's own construction, consisting of eighty 10-inch shells carrying about 8000 feet of 2-inch pipe coils. The oil is not relayed, that is to say repumped, at these intermediate stations; it is merely heated.

When their use is not necessitated by extreme cold the intermediate plants are closed down and the operating personnel moved away. Thus, they do not contribute to the expense of the pipeline except when actually in operation.

Exhaust Steam Utilized

IN the operation of the heaters at the pumping stations the exhaust steam from the pumps passes down into the heater shell; the stream flow of oil enters the heaters through suction lines and passes through 2-inch tubes. The temperature rise is effected in the tubes, which are surrounded by the exhaust steam, and the oil is discharged into the main line at a temperature of about 125° F. It is received at the next station at about 82° to 85° F.

Experience has shown that Smackover crude must be moved at above 85° F., to be handled economically through a pipeline. Temperature rises of 45 to 50 degrees are effected under this method of utilizing exhaust steam, depending in part upon whether oil from the third producing zone at Smackover (2580-2650 feet) or old stock crude is being moved. Third zone oil is a few degrees lighter than crude produced from the upper zones, but all oil from the Smackover east field takes a general heavy gravity classification.

Steam being necessary to heat the crude oil transported, the Standard made no attempt in building its pipelines to install highly economical equipment, such as Diesel type engines or electrical power. It installed ordinary tandem compound 6x18 line pumps and Farrar-Trefts locomotive-type boilers.

All steam equipment is protected by asbestos insulation to avoid air losses and all exhaust steam is passed through the heaters. Station buildings consist of structural steel frames with galvanized covering. The usual neat frame dwellings have been provided for employes and their families.

System Quickly Built

THE smoothness of operation since the pipeline has been in service indicates to the management that it was well constructed, notwithstanding the system was in operation 67 days after the first plats were made ready. The line was placed in operation on August 24, 1925.

In the beginning, deliveries from Smackover to Grand Lake were limited by the amount of crude that could be moved from the river terminal. Some trouble was experienced at first in getting enough boats into the Mississippi river service to Baton Rouge, La., where the Standard's refinery is located.

No new work on the line has been necessary since its completion, except to put in one and one half mile loops in two sections to balance the system in swamp areas.

Terminal station and wharf at Grand Lake, to which the pipeline connects, together with the boats used in river

Airy in the Hot months

The Highland Body Mfg. Co.
Cincinnati, Ohio

Gentlemen:

Replying to your letter of the 26th, ulto., wish to say that we are using Highland Cabs on all of our trucks and find them very convenient for our chauffeurs.

They are airy in the hot months, weatherproof in rain and snow, and snug and warm in winter.

Yours very truly,

The Cincinnati Butchers' Supply Co.

(Signed) Herman Schmidt, Secy.

The Highland Body Mfg. Co.

430 Elmwood Place
Cincinnati, Ohio

HIGHLAND *Cabs*

Patent Pending

MORE OIL SALES

With oil displayed in this Rack holding 24 Dispensers. Has hinged caps covering each spout. All Bottle trays removable. The Neatest and Best Rack on the market.

Send for Particulars

Wm. Neil & Co.

617 W. Division St. Chicago, Ill.

transportation of the crude southward, belong to the refining department of the Standard Oil Co. of Louisiana.

Pipeline operation is under executive charge of F. Ray McGrew, vice president and general manager of the Standard Pipeline Co., Inc., with offices at Shreveport.

Argue Against Gasoline Rate On Crude Carrying Casinghead

WASHINGTON, July 3

THE Interstate Commerce Commission's complete membership listened to arguments June 24 on whether a crude into which casinghead gasoline has been run may be transported on the crude oil freight rates.

The argument was made on the commission's docket No. 14264, National Refining Co. vs. Louisville & Nashville et al pending for several years. Fayette Dow, appearing for the oil company argued that, in this case, the oil producer did no more, when he put casinghead gasoline into crude, than to restore something taken from it because the well was pumped by the vacuum process. The crude came from the Big Sinking field in Kentucky, and was shipped to refinery points in Ohio and Canada. From December, 1920 to August 17, 1922 it was shipped on the crude rate.

Then the Interstate Commerce Commission informally ruled that the gasoline rate should have applied, because the casinghead gasoline had been put into the crude tanks and the blend shipped in tank cars to the refineries. For several months after that ruling the complainant paid the gasoline rate, although the blend could be used for no other purpose than that to which crude is put.

This increase to the gasoline rate was forced on the theory that the railroad incurred a hazard in its transportation similar to that in transporting gasoline.

On account of the disputes as to the hazard in shipping, the crude was tested by three men, one representing the railroad, one the shipper and the third the Commission. Mr. Dow said all their tests showed the oil shipped was well within the limits on all the tests deemed necessary to determine the fire and explosion hazards, vapor pressure test, flash point, gravity and gasoline content. The tests, he said, showed conclusively that the product of the field, with the condensate returned to it, was within the limits of crude of the Somerset type as well as far within the limits of many other crudes.

Mr. Dow explained that, in the Mid-Continent field, oil producers are forcing gas back into the oil sands and that the courts have held, in a number of cases, that a producer must pay royalty on the gas so returned to the sands because, obviously, it was part of the oil taken from the lease in the first instance.

"Our position is this, and I will risk my case on it," said Mr. Dow, "that under those words of the tariff 'crude oil' we have the right, if we were smart enough, to reach down into those oil sands and get that crude oil in all its richness and put it immediately into a tank car and ship it. That would be crude oil and nothing else, if we could do it.

"And when I say that this report (of the examiner) does not appreciate the implications of progress, I will illustrate it in this way: All this took place several years ago. What was done, as I said, was to take the residue gas and pipe it over the hillside and burn it. To-day in the Burbank field of Oklahoma that residue gas is being put back down into the oil sands to permeate the porous rock; to restore the pressure; to produce more oil and to come to the surface with the crude, no longer a dry gas, but bringing with it other liquid hydrocarbon.

"Don't you see, therefore, that even if it were true that what we got by our vacuum process, the casinghead gasoline which was run to crude storage tanks was richer and more volatile oil than the oil as it came from the wells by the pump it cannot be described as anything other than crude oil."

United North & South To Keep Deep Oil Rights

Staff Special

HOUSTON, July 2.—Details of the transaction whereby the Magnolia Petroleum Co. acquired the Luling properties of the United North & South Oil Co. disclosed that the sellers retained all rights below 3000 feet in the areas affected by the trade.

The United North & South, of which Edgar B. Davis of Brockton, Mass., is president, retained its cash in the bank and accounts and notes receivable.

Sale of the company's Luling properties, with the exceptions noted, was for total consideration of $12,100,000, as previously reported; half of the amount being paid in cash and the remainder to come out of 50 per cent of the seven-eighths working interest, when, if and as the oil may be produced.

NEW ROADS, LA.—The Gulf Refining Co. of Louisiana has just completed its modern bulk plant here. Emile Chenevert is agent.

Let 'er Rain; Let 'er POUR—
It Can't Get Through the *Moisture-proof* Case of
AMERICAN Recording Gauges

Enclosed in a moisture, fume and dust-proof case, the American Recorder can be exposed to the elements without danger of injuring the movement.

Illustration shows an American (formerly Columbia) Recorder on a gas line in the Lucky Field, near Wetumka, Oklahoma. It gives an accurate, *written* record of the pressure of the natural gas at all hours of the day or night.

Among the features which have made American Recorders the favorite in the oil industry are:

Time Punch, which gives a record of when and how often readings are taken. Non-removable Chart Holder, which prevents loss of button and makes it easy to change charts. Removable and adjustable Recorder Arm. Removable, non-corrosive, non-spilling Glass Pen. Extra heavy and non-corrosive movement.

American Recorders are the product of gauge makers who have back of them over three-quarters of a century of experience.

Write for Catalog E-27.

American Schaeffer & Budenberg Corp.

Atlanta	Cleveland	Philadelphia	*Seattle
*Boston	*Los Angeles	*Pittsburgh	St. Louis
Buffalo	Detroit	Salt Lake City	Tulsa
*Chicago			

*Stock carried at these branches.

Direct Factory Representatives for Eastern Canada: Mechanical Equipment Co., 807 New Birks Building, Montreal.

For Middle Western Canada: Kipp-Kelly, Ltd., 68 Higgins Ave., Winnipeg.

IN PRESS

Ready for delivery July 12th

Viscometric Conversion Tables of Petroleum Lubricating Oils

By T. T. Gray

THIS work contains viscosity readings of hundreds of lubricating oils from Mexican, Pennsylvanian, California and South Texas crudes on the Engler, Saybolt and Redwood Viscosimeters, at temperatures of 100°, 130°, 140° and 210°F on the Saybolt instrument, 70°, 100°, 130°, 140°, 200° and 212°F on the Redwood, and 20°, 50° and 100°C on the Engler. The thirteen different readings on each oil at different temperatures, and by three different instruments makes it possible to convert quickly and accurately the reading on one instrument into terms of another and at any of the recognized testing temperatures.

This book should be invaluable to those finding it necessary to make quick and reliable conversions.

Price $5.00

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THE GRAY INDUSTRIAL LABORATORIES

961-975 Frelinghuysen Avenue

Newark N. J.

Variety is Spice of Advertising Stunts Used by Oil Marketers

CLEVELAND, July 6

THE centuries that separate the elephant from the airplane as a means of transportation, mean nothing to oil companies seeking original and unusual stunts in bringing their products into the eyes of the motoring public. These two extremes in transportation methods have just recently been used by two oil companies as part of their advertising campaigns.

The largest elephant of a circus recently visiting Miami, Okla., was used by the Standard Oil Co. of Indiana in a street parade, while the Lincoln Petroleum Products Co., Flint, Mich., recently used an airplane to focus the attention of the public on its products.

A wide variety of original ideas is being used by oil jobbing companies who do not want to make large expenditures in advertising. Many of these companies have no advertising managers, but the ideas, stunts and schemes are usually developed by some member of the organization. They reveal as wide ranges in methods as the miles that separate each company. Anything from a gallon of free motor oil and ice coupons to airplanes and insurance policies come into the class of successful ways of creating interest among the motorists and in increasing sales.

Moves Ball Team by Plane

TRANSPORTING its base ball team by airplane to play in other cities, caused considerable comment and interest among the public at Flint, when the Lincoln Petroleum Products Co. sent its team flying to Lennon, Mich., recently. Later in the afternoon the team played another game at Clio, Mich. The fact that both trips were made by airplane and that the team was victorious in both instances obtained additional publicity for the company from both press and public.

The public had been invited to witness the team "go up in the air" in the Flint airport when it started on its way to play the matches.

The flying circus of a recent air meet at Flint was obtained by the company to remain for several weeks in order "to give everyone in Flint a chance to ride in an airplane," according to the newspaper advertisement announcing this fact. Special flights were scheduled for each day at a nominal charge. Tickets were on sale at all company stations. Lincoln products were used exclusively in the planes which performed in this meet. This fact was also heralded in the advertisement.

Another jobber and marketer who believes in the power of the airplane as an advertising medium is the P. W. S. Oil Co., of Minot, N. D. It recently engaged Chet Jacobson who flies over the state and the northwest. Advertisements of Somoil, which the company guarantees to be 100 per cent pure Pennsylvania oil, are painted on both sides of the airplane, and this helps to sell oil, according to H. B. A. Wigginton, vice president.

The Arrowhead Gasoline Co., Moundsville, W. Va., is offering a $1500 accident insurance policy for one year at $1 to the purchaser of 50 gallons of gasoline or 50 quarts of oil from any of its dealers or service stations, according to William C. Fry, secretary and general manager.

Free Ice is Offered

A TWENTY-FIVE-POUND ice coupon with each five gallons of gasoline purchased, or with each refill of Sunco motor oil, was the opening day attraction at the garage and wash rack of the Main Service Station, Akron, O., which B. F. Connelly owns.

Mystery, that ever has a fascination, was the attraction at the new service station of Kennedy Oils, Galesburg, Ill. Each purchaser of five gallons of gasoline was given the privilege of drawing his own prize which was in a sealed envelope. This was to be redeemed within two weeks at that particular station. The gallonage averaged 500 gallons per day since the opening, and the stunt was successful, according to E. R. Kennedy.

An increase of approximately 40 per cent in service station sales was effected by a unique advertising stunt used by Whitt & Nichols Oil Co., Claremore, Okla. Cards, in the style and size of an ordinary calling card, and labeled "Permit" were mailed to 1200 motorists in the company's marketing territory. On one side of the card was printed:

"Permit. This is to certify that I, the legally wedded wife of . . . . . do hereby permit my husband to go where he pleases, drink what he pleases, and when he pleases, and I furthermore permit him to keep and enjoy the company of any lady or ladies, as he sees fit, as I know he is a good judge. I want him to enjoy life in this world for when he dies he will be a long time DEAD.

"Signed . . . . . Note—The only request I have to make of him is that he gets his oil and gas from . . . ." The reader is instructed to turn to the other side where the company's name and address may be found.

Some women were reluctant about signing the cards, Charles E. Whitt reports.

Exhibit at Industrial Shows

VARIOUS industrial shows frequently command the attention of oil companies who seek inexpensive advertising. A booth at the annual American Legion Auto Trade Show, at Coatesville, Pa., which attracts thousands of inhabitants of Chester county, was taken by the Coatesville Oil Co. The company has been a distributor of Texaco products since 1916, according to Homer N. Gebhard, proprietor.

Advertising of a week's duration at the "Own Your Own Home" show of Union county, N. J., at Elizabeth, N. J., was recently completed by the Sure Service Filling Stations, Inc., of which Henry A. West is vice president and general manager.

A year's contract for animated advertisements on local movie screens has been signed by L. H. Martin, oil jobbers of Greensboro, N. C., as part of his advertising campaign.

Telephone guides, carrying its advertisements in four conspicuous places, are put out by the Gopher State Oil Co., Winona, Minn.

Highway bulletins, newspapers, beacon lights and direct mail advertising keep ethyl gasoline distributed by the Refiners Oil Co., Dayton, O., in the eye of the motoring public. The fact that ethyl gasoline helped to bring in the three winning cars at the Memorial Day races at the Indianapolis speedway, is being featured at this company's service stations, W. E. Talbot, treasurer and general manager, says.

A booster plate at its service station, displaying the name of the town and also "That Good Gulf Gasoline" which it distributes, form a part of the publicity campaign of the Conneaut Lake Roller Mills, Conneaut Lake, Pa.

Cosden Chemist Placed On Sales Staff

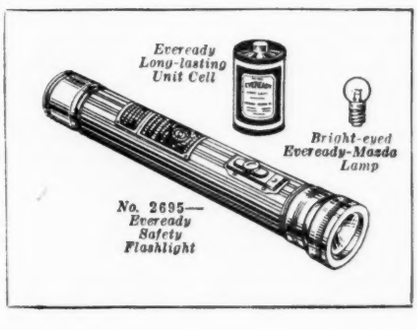
CHICAGO, July 3.—Practical achievement in experimental chemistry has won for W. E. Espey a position on the sales staff of the Cosden Sales Corp. at St. Louis where he will be in touch with many leaders in the industry, according to the "Cosden Oil Dispatch," bulletin of the Cosden Sales Corp., Chicago. Mr. Espey was formerly chief of the department of experimental chemistry for the Mid-Continent Petroleum Corp. (Cosden & Co.) Previous to becoming chief chemist, he was assistant chief chemist under Dr. C. K. Francis at the Cosden laboratories. Mr. Espey has contributed articles frequently to trade and technical publications.

After graduation from school, Mr. Espey entered the laboratory of the Missouri Pacific Railway Co. After three years he entered Swift & Co.'s laboratory in East St. Louis, becoming chief chemist and later division superintendent of the fertilizer department.

In 1914 he became assistant chief chemist of the Pierce Petroleum Corp., and later chief chemist. In 1918 he became assistant chief chemist of Cosden & Co.

New Evereau

THIS new Eveready Safety Flashlight was especially designed for use around oil and gas plants, mines, etc.—wherever there are explosive vapors and gases. It has been officially approved for such use by the Bureau of M[illegible] Underwriters' Laborato[illegible]



The main feature of this light is a spring-mounted lamp. Should the lamp glass be shattered (which is hardly possible, because of the rugged, projecting lens-ring and the extra-heavy lens), the circuit is instantly opened and the filament cannot ignite vapors or gases in the surrounding atmosphere.

In all other respects, the light is a standard Eveready 3-cell, Long-range Focusing me[illegible] switch, e[illegible] adopt this ligh[illegible] equipment.

Manufactured and guaranteed [illegible]
NATIONAL CARBON CO., INC.
New York San Francisco
Canadian National Carbon Co., Limited
Toronto, Ontario

EVEREADY
FLASHLIGHTS
& BATTERIES
-they last longer

ds

VERTICAL
TAL DROP
STEEL BALL
CHECK VALVES.

e furnished in the union body type with screwed ends from ½" to 2"
ie flanged body type with flanged ends from 1½" to 3".

ne use of guide pins in the union body type and a cage comprised of steel pins and a diaphragm in the flanged body type permits these valves to operate in either a horizontal or vertical position. In the flanged body type both halves are symmetrical and equipped with removable seats so that the steel ball will operate in either half by merely placing the guide pins in the opposite side.

The steel diaphragm clamped between the body halves is equipped with five circular openings which are more than equal to the pipe area.

Write for further information

HENRY VOGT MACHINE CO.
INCORPORATED
LOUISVILLE, KY.

New York Chicago Philadelphia Dallas Atlanta Cleveland

Manufacturers of: OIL REFINERY EQUIPMENT, DROP FORGED STEEL VALVES AND FITTINGS, WATER TUBE AND HORIZONTAL RETURN TUBULAR BOILERS, ICE MAKING AND REFRIGERATING MACHINERY.

Would Help Farmers by Making Alcohol from Surplus Corn

WASHINGTON, July 6

ALCOHOL for use in the automobile as a substitute for gasoline has been again seriously suggested, this time by Senator Heflin of Alabama, for relief of the farmers.

Addressing the senate on flag day on "the farmer and the flag" the senator suggested the government establish distilleries throughout the land and convert the surplus grain into alcohol. In that way he suggested the price of corn could be raised from 40 or 45 cents per bushel to perhaps $1.50 per bushel.

"Without raising the price of pork chops at the same time?" asked the writer.

"Yes sir, without increasing the price of pork chops," said the Alabama senator. "You see the idea would be to use merely the surplus. That would not tend to bring up the prices of corn that would not be surplus.

"Alcohol is used now in competition with gasoline. If the government were to establish distilleries at convenient places, the surplus grain crop could be turned into alcohol and competition established for gasoline," said Senator Heflin. He said alcohol was being used in New York as fuel around the docks to reduce the fire hazard, and in Germany.

Delivered in Outline

SENATOR HEFLIN delivered his ideas in the senate only in outline. He withheld his speech for revision. That is usually the thing done when a public man is preparing a campaign speech, for the edification of his constituents in Buncombe county. The speech being so held may be "revised" in accordance with the reactions noted among those who heard or read about it in outline. In other words, it can be put into innocuous form when it is held for revision. Should the idea of the government establishing distilleries, even for the laudable purpose of relieving distress among the farmers be obnoxious, the "revised" speech can come out in such form as to be unobjectionable. This is the season of the year when statesmen prepare speeches for their constituents, many of whom seem to live in Buncombe county, and delight in buncombe or its modern form, bunk.

The Alabama senator, at the time of his speech, could not see his way clear to vote for the farm relief bill, which provides for the valorization of the principal farm crops, much in the way Brazil tried to valorize her coffee crop five or six years ago, only to bring herself near the edge of bankruptcy by her attempt to interfere with the inexorable law of supply and demand. Therefore it was up to him to suggest some other method for artificially raising the price of farm products.

Conversion of the surplus grain into alcohol was his suggestion. In that way he killed two birds with one stone. He threw out the idea that there would be relief for the farmer and competition for the Standard Oil interests. (The Senator mentioned the Standard as if it were the only factor in the making and distribution of gasoline.)

Is Not a Chemist

SENATOR HEFLIN is neither a chemist or an economist. Were he a chemist he would know that alcohol cannot be made from grain for less than $1 a gallon. Were he an economist he would know that alcohol as a motor fuel would have come into use long ago, had it compared in price with gasoline.

The humblest moonshiner in his state of Alabama could tell him that four gallons of whiskey is considered a good yield from a bushel of corn. A first year chemist in the food and drugs branch of the department of agriculture could tell him that good whiskey is half alcohol and half water.

When the moonshiner gets his four gallons of liquor, he has two of alcohol. If he would run his liquor through his still many times he probably could get alcohol with not more than 5 per cent of water in it. But when all that work was done, the cost would be far above $1 a gallon.

Before the war, whiskey just out of the distillery could be bought for about 35 cents a gallon. That meant that the alcohol in it, if the re-running could be made without cost or loss of any of it (impossible conditions of course), a gallon of alcohol was worth 70 cents.

Cost of fuel and labor, the two things needed in making alcohol, have increased, roughly speaking 100 per cent. An estimate that alcohol could be made for $1 per gallon, therefore, is extremely conservative.

The idea that alcohol has been used in Germany as a motor fuel to any extent is not worth a paper mark, and this country still makes the largest industrial use of alcohol. Everybody in Germany is free to make as much alcohol as he can extract from anything that contains starch or sugar, the only substances from which alcohol can be made, whether the sweetness comes from sugar in cane, in wood or in beets, or starch in grains or potatoes.

France, for several years, has been trying to find a way to use more alcohol. The taxicabs of Paris use what is known as "National Fuel" because the government uses methods to compel its use. There is considerable alcohol in the mixture of gasoline and benzol, the other ingredients. France is trying to force the use of alcohol for two reasons: It gives a larger market for its wine industry and it tends to make France independent of the rest of the world for motor fuel.

However, practically every nation on earth has given up trying to find a substitute for gasoline. France is subsidizing the hunt for petroleum within her territory. So is Italy. Only in the United States senate, on flag day, is there evidence that, in the most enlightened land on earth, are there men who dream of making alcohol a substitute for gasoline at this stage of the world's development.

Manhattan Buys Monark In Kansas City

Staff Special

KANSAS CITY, JULY 6.—The Manhattan Oil Co. of Kansas has purchased the Kansas City distributing system of the Monark Gasoline & Oil Co. it was announced June 23. The properties are to be taken over July 1. It is understood the consideration was around $1,500,000.

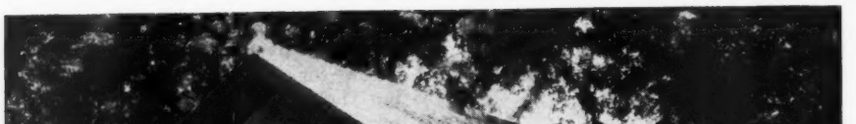
Properties of the Monark include 70 filling stations in greater Kansas City, lubricating oil plant, bulk station with large storage capacity, office building and garage. The Monark company was founded about 13 years ago with a single service station by A. A. Smith, its present president. Now it is one of the largest distributors of petroleum products in Kansas City, with a huge stove distillate business in winter to supplement the gasoline and lube departments.

Mr. Smith will retire from the oil business, it is understood. He has been an active member of the Missouri Oil Men's Association since its organization. He served as the first secretary after organization and is now a vice president.

The Manhattan will be the largest single distributor in Kansas City as a result of the purchase. It will have approximately 90 stations in greater Kansas City. It is an important distributor also in Iowa, Nebraska, Wisconsin and Minnesota, in which states it has about 250 stations.

About the first of the year the Manhattan absorbed the Kansas City Refining Co. which has a 5,000-barrel plant in Kansas City, Kan., and a 250 mile pipe line from the plant to Greenwood county fields. At the same time it took over producing properties of the Greenland Oil Co. and a large part of the properties of the Mission Oil Co. These various companies were largely owned by the same interests and were consolidated into one organization to promote efficiency and ease of operation. With the addition of the Monark properties the company is a $25,000,000 corporation.

MARQUETTE, MICH.—A new Reo two-ton truck has been added to the equipment of W. J. DesJardins to serve farmer trade out of Skandia, Mich.



Gasoline and Oil Filling Stations

and Steel Buildings

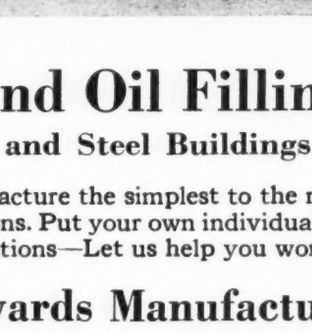
We manufacture the simplest to the most elaborate Stations. Put your own individuality in your Filling Stations—Let us help you work this out.

The Edwards Manufacturing Co.

524-544 Eggleston Ave. **Cincinnati, Ohio**

"ST. LOUIS" *Steel Barrels*

"ST. LOUIS" SERVICE



"ST. LOUIS" QUALITY

Two vital facts to consider when placing future business

ST. LOUIS STEEL PACKAGE CO.

Natural Bridge and Goodfellow

St. Louis, U. S. A.

Domestic Fuel Contracts Not Being Made

Staff Special

CHICAGO, July 6.—Domestic fuel oil contracts are topics of lively discussion among oil dealers in Chicago. The time of year will come soon when oil jobbers are accustomed to send out salesmen and make contracts with householders for their winter's requirements. Now, no contracts are being made and none likely will be made until fall or at least until the peak of the gasoline season is reached.

By this time of year, jobbers usually are protected with contracts for their estimated requirements from some one or more refiners. Now, however, refiners are not making any contracts with jobbers which involve anything except quantity. At the noonday lunch of the Greater Chicago Oil Men's Club recently a refinery representative offered to wager a hat with a local fuel oil dealer that he (the jobber) could not find a single refiner stipulating a price on gas oil over a period; and he offered two weeks in which to make the search.

John M. Carson of Cosden Sales Corp., stated that his company would be willing to enter into contracts with jobbers for delivery of furnace oil in specified quantities, spot price date of delivery, but would promise nothing as to physical specifications except the company's assurance that it would work satisfactorily in a domestic type oil burner. Barney Majewski, of Shaffer Oil & Refining Co., said on the same occasion that those were virtually the offers they were making to their tank wagon customers. They are willing to agree to supply customers with the furnace oil they need over the winter, guarantee it to burn satisfactorily in the customer's burner, and accept payment at some stipulated figure above spot price date of delivery.

The jobbing industry is "up in the air" as to what this winter's domestic fuel oil will be, what it will cost and what it will sell for. The only light on the situation came recently from the Standard Oil Co. of Indiana. That company is offering contracts for delivery of its Stanolind Furnace Oil now, but even those agreements do not stipulate price, except a spot price which is in effect now and holds good until it is changed officially. Just now the Standard offers to deliver its furnace oil to customers at 9 to 11 cents a gallon, dependent upon the size of the purchase. The price range as of this writing is:

One to 149 gallons, 11 cents; 150 to 399 gallons, 10 cents; 400 to 849 gallons, 9½ cents, and 850 or more gallons 9 cents. The A. P. I. gravity of this material which the company sells under the trade name of Stanolind Furnace Oil is about 36-38, but the company's representatives do not promise any particular flash or color. The prices went into effect about June 15 and are subject to revision, either way. Persons ordinarily

well informed in such matters say the refiners are certain to approach the winter this year with much less heavy distillate in storage than last year.

Independent fuel oil marketers in Chicago, although they are not going so far as to offer their customers term contracts involving price, express belief that domestic fuel will be abundant this winter, although probably not up to last year's quality as to color. Several of them are accepting orders today on a scale of prices equivalent to that named by Standard Oil Co., but are not pushing business because they think furnace oil is just as likely to be lower as higher at some later date this summer.

The average storage of householders in Chicago is bigger than it was a year ago. All new oil burner installations include tanks of reasonable size and many of the homes, whose owners economized on tanks three or four years ago when the installation was made, have replaced the small tanks with big ones. Lynch-Clarisey Oil Co., for instance, one of the oldest and best known fuel oil jobbers in Chicago, refuses to make a dump of oil less than 400 gallons.

The average householder, who heats his place with oil, buys about four times a year. One dump a month during the winter is all the service the average customer requires. Experience with a large number of users over several years has shown that domestic installations average about 2500 gallons a year consumption. So, calculating roughly, the man who fills his tank at home on today's market and holds for winter has bought about 25 per cent of his requirements.

"Oklahoma refiners with cracking plants are buying 24-26 straight reduced fuel oil now in competition with me," one Chicago oil jobber pointed out recently. "That cuts down the supply and raises the present price to me. But gasoline prices are falling at the refinery and the motoring season is on. If the gasoline market breaks on over-supply the refiners will go out of the fuel oil market and I will be able to protect my fuel oil customers at a better price later."

Becomes Distributor for Champlin

GALESBURG, ILL.—Kennedy Oils of this city has been appointed distributor in northern Illinois for the Champlin Refining Co., Enid, Okla. Bulk storage has just been installed by the Kennedy company at its plant here.

A new service station was recently opened by the latter company here which it bought from the American Oil Products Co. It sold 7381 gallons of gasoline on the two opening days.

EAST ST. LOUIS, ILL.—The Standard Oil Co. of Indiana offices which have been in its bulk plant here for over 30 years, have been moved into its new and modern plant recently completed.

HANCOCK, MICH.—H. S. Goodell's new service station on Memorial road at Houghton, Mich., recently opened for business.

Cut Your Haulage Costs With Selden 6-Cylinder Speed Trucks

PACEMAKER

6-Cyl. 55½ H. P. Motor. 500-Gallon Tank.
Speeds up to 50 miles per hour.

ROADMASTER

6-Cyl. 72 H. P. Motor. 800-Gallon Tank.
Speeds up to 50 miles per hour.

The *remarkable performance* of the PACEMAKER and ROADMASTER is responsible for the enthusiastic praise of owners and drivers. *Selden In-Built Quality Construction* is reflected in the long life and low maintenance costs of these speed trucks.

For heavy-duty service, 4-cylinder models with 9-speed transmissions; capacities, up to 1600-gallon tanks.

SELDEN TRUCK CORPORATION, ROCHESTER, N. Y.

Factory Branches

Long Island City, N. Y. Boston, Mass. Tulsa, Okla.

Selden Trucks

Pruning May Be Overdone

Newest Oil Finder Clucks, Cackles And Wears Feathers

T. E. Owen, mighty good man and successful farmer of Como, was here Wednesday with good news from his country. He brought an egg from his barnyard on which was developed a big oil derrick and an oil pool near by. The engraving was natural and almost perfect. It requires no expert to see plainly the derrick and pool. Mr. Owen says the oil experts have overlooked his immediate section in seeking for the liquid in this county.

If we know our oil dope correctly, and we think we do, there is oil where such eggs are laid. This wonderful egg is at our office.—Sulphur Springs, Tex., Telegram.

THE above item has been brought to the Prophetic Egg Editor who hastens to remove our doubts as to the probability of such an occurrence. It seems that stranger things have happened aforetime. As is well known, the outcome of a presidential election is ascertained far in advance in many communities by the discovery of eggs bearing perfect likenesses to the candidate who is due to win. Sometimes the egg also indicates as many members of the cabinet that will be appointed as there is room on the shell. So, if a hen can foretell of such intricate things as political races, why can not she also survey the hidden mineral resources of a community? The psychic powers of a hen pass understanding.

The editor will relate one similar occurrence and then he will get on with the story. A pullet belonging to a Mr. Yrp or Wiggins, or something like that, laid an egg some ten years ago in Coop county, Mass., on which was perfectly developed a picture, in colors, of a Star rig. She was only a young hen and was a bantam besides, so she could not bring out a standard derrick. There was no engine or boiler on the picture and no tools, hence it was taken to mean that if anyone put up an outfit, he shouldn't drill. Sure enough, no oil has ever been found in Massachusetts.

The egg editor believes that a fund should be raised at once to purchase the hen—if Mr. Owen can single her out, or his entire flock if he cannot—and make her common property of the oil industry. Some of the money already in the research fund of the A. P. I. could well be devoted to the purpose. Mr. Owen doubtless would be willing to sell her at a nominal price; she has served her purpose to the community already in indicating that oil is there and Mr. Owen will realize all the fortune he needs from his royalties.

This should be wholly an oil industry proposition. Governmental interference is not required. The A. P. I. should act at once and make the purchase and then place the talented clucker at the disposal of the entire industry. She could be sent around to various parts of the country as needed. For instance, if the daily average production of Oklahoma suffers a sharp decline, it is apparent at once that a new field is wanted. In that event, the A. P. I. would dispatch the hen, whose name our confidential agents report is either Eglantine or Egnes, to the Mid-Continent Oil & Gas Association. She would be then taken to a locality in carefully guarded secrecy. The instant that she came through with a predictive egg, or vice versa, if you prefer, the result would be flashed to all operators and the usual "scramble" for acreage would ensue, with everyone starting from scratch.

Whether Eglantine, or Egnes, indicates on her shells whether rotary or cable tools should be used in making the test, the dispatch from Texas fails to say. Neither is it made clear whether she informs the operator as to depth or thickness of sand. Those are details however. Remember, please, she is probably a beginner—only her pride in the community about Como got her started off—and in time she will improve her technic to take in more explicit information. Probably we shall yet hear that she can bring forth an egg bearing, not only a structural map, but a complete log of the first well before it is drilled.

The secret of course will not die with Eglantine, or Egnes. Our agents have learned what is responsible for her peculiar ability. She has been fed largely on Doodlebugs.

The Editor's Viewpoint

National Petroleum News

Attitude Towards Consolidations

THE attitude of the federal Department of Justice toward consolidations and combinations within industry can be gleaned from remarks of Col. W. J. Donovan, assistant to the Attorney General of the United States, in his address recently before the New York State Bankers' Association. Col. Donovan is in charge of anti-trust prosecutions. The case brought by the government against oil companies that are holders of cracking process patent rights is under his direct charge, therefore his views should be of particular interest to oil men.

He called on the bankers to use their influence to call a halt on consolidations of industrial concerns which have a tendency to destroy or lessen competition in that industry. Unhalted, he said, this tendency is arousing resentment in the minds of the American public which may lead to government intervention and regulation of some of the huge corporations being built up through combinations and consolidation of existing companies.

Col. Donovan linked together the wide distribution of industrial stock in the public's hands today, as compared with the holding of stock control within the company, the policy formerly followed, and the present trend toward building huge corporations through consolidation. Wide distribution of stock holdings has separated ownership from management, he said, and lessened responsibility of management to those whose money is invested. The resulting tendency has been toward over-development and speculative expansion, resulting in the present period of consolidations.

That consolidations that tend toward monopolistic control in an industry, will be opposed by public sentiment there is little doubt. The American public is inherently opposed to monopoly, entirely regardless of whether that monopoly pursues a course for or against the public's good. Aside from this question, Col. Donovan says consolidation will be tolerated if by their nature they serve the public interest. His inference is that the government will be the judge, when they are formed, as to whether or not they can and will serve the public to better purpose than formerly, as a group of separate entities.

The government's suit against the holders of cracking process patent rights may be taken as its decision that this combination of interests, which is to the same end as a combination of capital and properties, is against the public's good. Col. Donovan's petition states it has increased the price of gasoline to the public. It seems as if that fact would be hard to prove. Certainly there is something to be said on the other side, namely that this mutual granting of protection from attacks on patent rights has facilitated the improvement of these various processes and their installation in plants of licensees.

The natural course of development of an industry is a hard force to dam. The purpose of the dissolution suit against the old Standard Oil Co. of New Jersey, and what was confidently believed at the time had been accomplished, was to break that company into numerous small fractions and destroy the Standard Oil Co. as a dominating interest. But far greater combinations of capital have arisen since, because the nature of the oil industry encourages them, and who can say but that the public has benefited because of them?—V. B. G.

Oklahoma Radicals Still Tax Hungry

PROBABLY most oil men think when they pay the gasoline tax assessed by most states that they have paid practically all the taxes assessed directly against petroleum products by government. However, they are mistaken. In the state of Oklahoma alone this year the oil industry will pay to that state something more than ten million dollars as a tax on the crude oil and natural gas.

By the end of the period 1916-26 this tax which previously was at a lower rate, will have paid into the state of Oklahoma probably more than sixty million dollars. It has been a God-send to the state of Oklahoma, because otherwise with there having been no oil there, Oklahoma would have lagged in development along many lines.

Now a campaign is under way by some radical interests in Oklahoma to raise even this big tax on oil. It is now placed at 3 per cent of the gross sales price of the crude oil at the well and there is also assessed the regular ad valorem tax on oil in storage as well as on all oil company equipment in the state. These radical interests headed by Campbell Russell would not only still further raise the tax, but assess it in such a way that it would be difficult to determine it except after much litigation.

In other words, what the radical interests are proposing to do is to collect still more money from the users outside of the state of Oklahoma—those users being the automobile owners, the farmers and everyone else who consumes any petroleum product. The Mid-Continent Oil & Gas Association headed by W. M. Davis, president and H. H. Smith, secretary are fighting this measure.

It would be well for everyone in the oil industry whenever the subject of taxation comes up to tell the man inquiring that in addition to the gasoline tax, he is also paying a tax levied at the source of the oil, to say nothing of all the regular taxes that are assessed against the industry all up and down the line.

If the radicals in the state of Oklahoma are able to hoist the tax on crude, it will be an indication of what radicals in other states can do. While the oil industry doesn't pay this directly, but passes it on to the general public, nevertheless, the oil industry should oppose any unfair taxes on its product, because the oil men are representatives of the public, in seeing that oil is not unfairly taxed at its source.

The consumers of petroleum in other states cannot be aware of nor be present during the fighting in an oil production state against an unfair tax assessment on oil, so the fight primarily devolves on the oil men to see that the consumers of their product are fairly treated. That is why the oil industry should fight vigorously the efforts of Campbell Russell to raise the gross production tax a good many million dollars a year in Oklahoma.

The Mid-Continent Oil & Gas Association is putting on a good hard fight against it and it should be supported. —W. C. P.

Chief Scouts in Their Offices

National Petroleum News

Guy B. Reneau

Guy B. Reneau, chief scout for the Tidal Oil Co., is a real old-timer as a Tulsa inhabitant. With vision unusual for one of his tender years, he foresaw the development that was to take place in the then struggling village, and moved in way back in 1902, when he was a boy 10 years of age. Tulsa has been his home ever since, but he is still not ashamed of the fact that he was born in Harper county, Kansas.

Mr. Reneau's oil activities have been confined to two of the big companies of the Mid-Continent field, the Roxana Petroleum Corp. and the Tidal Oil Co. He was with the former company seven years, working in the engineering, production, geological, and scouting departments, and gaining a wide experience which has stood him in good stead. He joined the Tidal organization in October 1921, working first with the geological department and then in the scouting end, finally becoming head of the latter. He is married and has three children, two boys and one girl.

Working under the direction of Mr. Reneau are the following Tidal scouts:—Phillip P. Dulin, Cushing, Okla.; E. Frank Pigott, Holdenville, Okla.; Floyd U. Newlin, Ponca City Okla.; and Ray W. Kettlesen, El Dorado, Kan.

IRON MOUNTAIN, MICH.—Triangle Co., Inc., a newly organized oil jobbing company here, has just completed two service stations and a combination bulk and service station.

All three stations have been built in the past five months and the last one was completed on May 25. All are of old English architecture, according to J. G. Stilwell, secretary and manager.

TULSA.—A three-story addition to the office building of the Tidal Oil Co., Sixth street and Cheyenne Ave., is in the process of construction.

CINCINNATI, O.—The new Armory Garage and Filling Station, which is under construction here, will soon be ready for business. Products of The Tressler Oil Co., with headquarters here, will be handled.

Finish Three Wells With No Trouble

HOUSTON, June 19.—Rio Bravo Oil Co., subsidiary in Texas of the Southern Pacific Holding Co., claims a record in Gulf Coastal drilling for putting down three wells at Pierce Junction, one of them 4800 feet deep, without a serious fishing job.

The crew that did the work is now drilling its No. 2 Southern Pacific fee on the west flank of the Pierce Junction salt dome, in which 787 feet of hole was made in a single tour early in the operation.

Completion of a 140-foot producing well in 14 days in the Electra district of North Texas is an accomplishment of a Rio Bravo drilling crew, according to Assistant Superintendent McDowell at Houston. The well was the E-12 Waggoner lands, which recently came in for about 40 barrels daily.

The rig was skidded, slush pits dug, drilling carried down, pipe set and the well was swabbing oil into the tanks in exactly 14 days. Counting rock bits, fishtail bits and core barrels run a total of 90 trips in and out of the hole were made .

Oil Men's Golf Game Won by Mel Keim

CRYSTAL LAKE, ILL., July 3.—Mel Keim won a dozen golf balls for scoring low gross in the golf tournament of the Chicago Oil Men held here June 24 on the Crystal Lake Country Club course. Mr. Keim is with Apex Motor Fuel Co., and is secretary of the Greater Chicago Oil Men's Club. He made a hole in one recently.

Each of the four prizes given was a box of a dozen golf balls. Barney Majewski, local representative of the Shaffer Oil & Refining Co., received one of the prizes for scoring low net. His actual count was 93 but he had a handicap of 28 which proved to be too much. W. W. Rice, assistant sales manager of Barnsdall Refining Co., was in the winning for scoring 12 sixes, the largest number of sixes. Herb Graffis of Petroleum Age was honored for the largest number of pars. He scored eight pars and a birdie on a nine-hole course.

The field day of the Greater Chicago Oil Men's Club was well attended. Covers were laid for upwards of 80 oil men and their guests. The club served them lunch upon arrival and dinner at night.

PENNSBORO, W. VA.—William Parrish, formerly with the Standard Oil Co. of New Jersey, has opened a few filling station here. He will distribute products of the Standard and of the Ohio Valley Refining Co., St. Marys, W. Va.

OLYPHANT, PA.—Supreme Oil & ervice Co., Box No. 497, contemplates erecting several stations, according to James B. Rosenfeld, general manager.

Institute Statement on Research Program

Geology

Project 1

Generation of Oil in Rocks by Shearing Pressures

THAT oil is produced by geological forces acting generally through long intervals of time on the debris of aquatic organisms buried in the sediments is believed by most geologists. The evidence is almost overwhelming, though it is largely circumstantial, that petroleum is a geochemical result of rock pressure and earth temperatures working through long time, and possibly under catalyzing influences, on fossil organic matter, which is generally regarded as the "mother substance." The rocks in which this fossil organic matter occurs are frequently spoken of as "source rocks."

The combustible vestiges of plants, and possibly of animals, entering into the mother substance are generally those more resistant to decay in water, on account of their waxy, resinous, waxy-fatty, fatty or oil composition which characteristically imparts to the aggregate deposit relatively high hydrogen and low oxygen content. Specifically, the principal among these surviving vestiges of structure, plant secretion, etc., are (1) spore exines (seed pads) (2) so-called fatty algae, (3) fragments of cuticles, (4) particles, or flakes, of wax and resin, the latter usually rare in the typical mother substance, and (5) the "humic" (or "ulmic") colloidal decomposition binder. All of these kinds of fossil components may be present and the "humic" binder is always present. In some cases nearly all the debris of plants or animals seems to have succumbed to bacterial action in the process of biochemical decomposition.

Some of the organic compounds in the plant or its secretions, such, for example, as waxes, spore exines and resins, doubtless pass the biochemical process and enter the unaltered sedimentary deposit with little or no chemical change. However, the organic aggregate, comprising both the fossil plant and animal debris on the one hand, and the humic decomposition matter, on the other, is known to undergo progressive devolatilization (carbonization) as the deposit is, under dynamic (geophysical) influences, altered, stage by stage, from the organic mud (sapropal) to black slates and graphitic schists.

Most geologists believe that the primary petroleums are in the course of time generated in the buried mother substance under (1) the influence (geophysical) of intermittent pressure and heat; (2) added pressure by the generated gases; (3) heat of gravitative friction; and (4) heat of chemical change.

The American Petroleum Institute statement in full on the 21 projects suggested by the National Research Council for its research program is as follows:

Criticisms and suggestions are invited from anyone in the industry. They should be sent to the institute offices, 250 Park Ave., New York.

A news story on the research program was carried on Page 20, June 30 issue, National Petroleum News.

The Microbian Theory

ON the other hand, there are many, especially among British geologists who believe that either the oils were originally brought to the deposit by the organisms taking part in the sediments, or that they were generated during deposition as products of biochemical (microbian) action. In either case the oils existed, presumably disseminated, in the sediments at time of deposition of the strata. According to this view oil is at the outset deposited in most carbonaceous aquatic, especially marine, sediments.

Still another, though small group among geologists, adheres to an entirely inorganic origin of oil, through generation from carbides or similar compounds of plutonic origin, coming from far beneath the sedimentary strata in which they are now found.

Another, a very large group of geologists, including, perhaps, most European geologists, together with most chemists, believes that the petroleum deposits of the world are mainly, at least, the product of alteration, either in the biochemical process or subsequent to burial, or animal fats, rather than of organic matter of plant derivation. The theory of the generation of hydrocarbons from metallic carbides can be successfully demonstrated in the laboratory but it is incompatible with the geological occurrence of oil observed in the field as to command little consideration.

Of great importance, however, is the question as to the primary contribution (as by diatoms) or the generation of the oil through the biochemical decomposition processes at time of deposition of the organic debris in the sediments, on the one hand, as opposed, on the other, to the generation of the oil at different times long afterward by what might be termed natural geological distillation in the crust of the earth. The latter view implies the restriction of oil fields to areas subjected to compressive stresses.

Pressure experiments carried out by McCoy and Trager (Journal of Geology, Vol. 28, 1920), under rather unfavorable conditions, appear to furnish evidence favoring the generation of oil under shearing pressure. The experiments by Steuart, by which finely disseminated oil, mixed with argillaceous matter, was occluded and carried down with other sediments, seem undeniable. It will be remembered, also, that the claims of the chemists as to the role of animal fat in oil genesis, have strong analytical support.

Proposed Plan of Research

THE experiments in view are principally shearing-pressure tests, with varying factors of time, pressure, temperature, catalysis, solutions, etc. They should be more carefully and adequately organized, and more exact, and should more nearly duplicate geological conditions than those previously carried out. The plans are based on the assumption that oil is generated from commonly supposed "mother rocks" — typical oil shales or marine bituminous (carbonaceous) shales — under loading of superposed strata, by pressures (mainly intermittent horizontal thrusts) operating through long periods, with heat of depth of burial, heat of friction, and heat of chemical change, and with added pressures of the resulting gases and oils. Great pressures will be exerted variably, intermittently, and through considerable periods, with conservation or maintenance of the heat generated or proved normal to the process.

The experiments by McCoy and Trager, and by others, as well as the observation of the effect of geologic processes in the oil fields, including the progressive devolatilization of the organic debris, argue for the success of the experimental project. Complete demonstration has long been greatly needed.

Project 2

Experiments in the Artificial Carbonization of Carbonaceous Rocks by Geophysical Methods

INTIMATELY involved in the generation of oil in mother rocks under geodynamic influences, primarily intermittent shearing stresses and geologic pressures and temperatures, is the progressive carbonization of the organic rocks; for if the oil is generated geochemically under the combined influence of these geophysical factors the organic matter will have lost volatile matter—that is, it presumably will have become progressively carbonized in the process.

Plan of Operation

ACCORDINGLY, the plans covering the shearing-pressure experiments in Project 1 provide also that the oil shales and other supposed mother rocks used in the experiments will be examined chemically after the various tests to

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determine whether they are further carbonized in the processes, with loss of volatile matter. Meanwhile, however, to make the studies of dynamic carbonization more comprehensive, it is planned to carry out experiments on a wider range of carbonaceous sediments, chosen at the outset as representing both different types of rock and markedly different stages of carbonization. These studies not only are most closely related; but they are inseparably connected.

Project 3

Studies of Source Rocks in the Micro-Furnace

(Micro-thermal examination of mother rocks of petroleum)

THIS study carries the work of paleontologist and sedimentarian to the retort. Preliminary investigation already has given evidence that leads geologists to believe much of value concerning the nature of oil shales would here be assembled.

This study has for its immediate object the observation and determination, by means of a micro-furnace, of the temperatures at which the optically distinguishable fossil components and their derivatives in the varied organic conglomerates that make up the different types of bituminous shales. "Oil shales," and other carbonaceous rocks change their optical characters, volumes, and state of matter, some at least, of which changes are incidental to chemical change.

At present no one knows what are the products actually yielded by the different components—algae, extines, cuticles, mycelia, groundmass, etc.—in any given sample of shale when it is distilled, or what qualities or elements in the distillate originate from each of these commodities when the rock is subjected to heat decomposition. Neither the role played by any single ingredient of the rock in determining the type or qualities of the distillates, nor the temperatures at which they are generated is definitely or even approximately known; the respective causes and effects are neither identified nor correlated.

To date the microthermal observations cover a number of oil shales of different ages and types, and of somewhat different states of carbonization. These observations cover also several cannels and some carbonaceous shales, together with a few coals and bogheads.

The observations as yet made are but partially interpreted. In fact, although inferences may in some cases be drawn with probable safety, and sometimes with certainty, the interpretation of many of the changes observed in the organic matter will be possible only in the light of further experience, or when the micro-furnace study will have been followed by the distillation tests to be made in the retort and these are in turn subjected to chemical analysis.

Plan of Operation

ACCORDING to the plan in view, of which this study is the first stage, the microthermal observations should be followed by distillations of the same rocks under the same conditions in a special retort, so that test cuts may be taken off at the temperatures corresponding to the observed changes in the components noted under the microscope.

The detailed chemical study of these cuts, the third stage in the procedure, should not only throw invaluable light on the importance of each of the readily visible components in the rock and of the organic groundmass as sources of distillates generated under different processes or conditions, but it should also indicate, roughly, at least, the quality or qualities of the distillate yielded by each. Jointed with the micro-furnace studies and the retort test, it should go far toward tracing the qualities as well as the quantities of the distillates back to their organic sources.

Through analogy and inference a better understanding may be reached of the origin of the natural petroleum also, and of the relations between the characters of the oil and the characters of the mother rock. Collectively, the studies should aid in opening the door to the attack from the genetic standpoint on the fundamental chemistry of petroleum.

It is evident that the method of study will be of great value in the solution of a wide range of problems, including questions relating to coal as well as other deposits of organic composition. At present neither the applications and importance nor the limitations in the use of the micro-furnace in the investigation of the carbonaceous deposits have been determined. It is, however, to be noted that while in some cases the process promises to exceed expectations, it is at the same time evident that in other instances it will leave much to be desired.

Project 4

Origin and Environment of Source Sediments

THIS project covers the study of oil shale or supposed mother rock sediments in the making. The examination of the conditions of deposition, of the ingredient materials, and of the compositions of the different types of mother rocks laid down in different environments and in marine and fresh water (as carried on under this project) should not require travel during the first year much beyond the limits of the United States. In this domain there are many localities where sediments thought to be of critical types should be in process of deposition. Such areas are Chesapeake Bay, Currituck Sound, indentations along the Gulf of Mexico, both in the coast of the United States and Mexico, the Gulf of California, and perhaps places in Puget Sound. Every ad-

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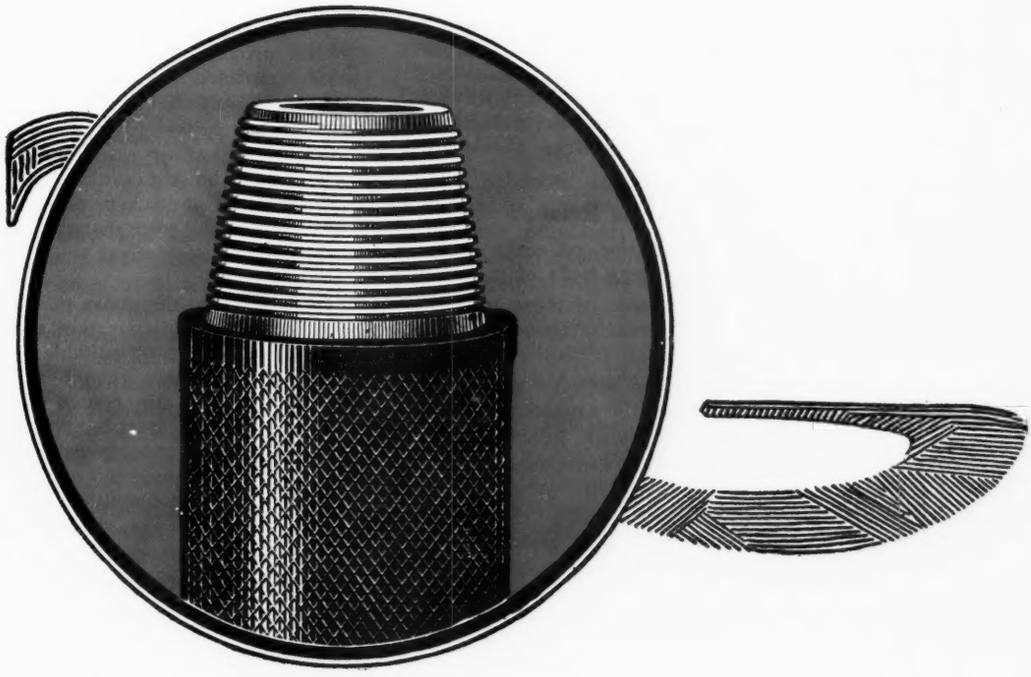

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Project 5

Critical Study of Selected Source Beds

THIS project contemplates study of four selected geologic formations which are in places sources of petroleum to determine their mode of formation, their relations to known accumulations of petroleum and natural gas, their characteristics and properties, and in particular the criteria that will distinguish source beds from other sediments, and the criteria that will distinguish a "spent" source bed from one which is a potential generator of petroleum.

Formations of widely different geologic ages and of very different characters will be studied to determine the reasons for the existence of petroleum in rocks millions of years apart in age of formation with all the evolution of new types of contributory organisms and modification or disappearance of old types which such a lapse of time demands. The study will take account of the characters of the oils yielded by the different selected source beds and will seek explanation in the comparative ages of the formations; in the stresses that have affected these beds; in their comparative depths of burial; and in their original and acquired compositions and characteristics for the differences in at least some of the chemical and physical properties of the oils.

Many of the chemical and physical properties of oils may undoubtedly be traced to the character of the original organic matter; to the conditions of its preservation; to the environment and the duration of the partial decomposition of this organic matter; and to the subsequent shift of the petroleum hydrocarbons. Whatever the facts gained by chemical and physical analysis of crude oils they must be interpreted in the light of their geological origin and early history.

Our present knowledge of source beds is fragmentary and most inadequate. Some of the evidence now available is convincing, although circumstantial. Other evidence upon which dependence has been placed is undeniably questionable. Many deductions and even observations are erroneous and misleading. The existing data are widely scattered. The determination and compilation of authentic information on selected source beds will assist materially all later geological studies involving sediments containing organic matter and will open the way to the genetic study of petroleum chemistry.

The economic application of these studies should be immediate, important and non-competitive. The knowledge will apply to all regions where oil is known to occur, and to all regions that are being considered as possible sources of petroleum.

Locale for Project

FOUR selected source beds will be covered—the Miocene source beds of the San Joaquin valley of California, the Upper Cretaceous source beds of Texas, and lower Pennsylvania source beds of eastern Oklahoma and Kansas and western Missouri, and Ordovician beds of the Mid-Continent.

Work to continue for three years. The Fellows to spend three months each year for the first and second years in the field collecting material and arranging with oil companies to procure needful and dependable samples. During the third year one or two special trips may be necessary.

The first year is to be devoted to field observations, and to detailed study of microscopical, biochemical and micropaleontological literature. At the end of the first year, it will be possible for the director of research to submit a comprehensive statement regarding present ideas concerning source beds, based upon studies of literature and the first year's work on the selected beds.

The second and third years are to be devoted to specialized studies. Each Fellow will take on field and make comparative studies in the different formations. These studies embrace micropaleontology, petrography, micro-chemistry, micro-thermal examinations, geology and physical conditions of organic sedimentation. The nature of the "spent" source material and and the possible reasons for different sources yielding different oils.

Possible Results

(1) Determination of rocks actually proved to be source beds of petroleum.

(2) Identification of those beds constituting the sources of the oil in different rocks.

(3) Distinction between spent source beds and those still capable of yielding oil by normal geologic processes.

(4) Progress in the determination of relations between type of source rock and type of oil.

(5) Preparation of a general descriptive work on source rocks.

(6) Training of students in research on fundamental problems of petroleum.

(7) Determination of criteria for the recognition of petroliferous provinces.

Physics

The Separation, Identification, and Determination of the Components of Commercial Petroleum Fractions

FUNDAMENTAL chemical research in connection with petroleum is necessarily bound up with chemical composition of the material. Most of the attempts to fractionate petroleum into its components have been based very largely upon fractionation by distillation. By this method alone the components of petroleum can not (except in cases involving the lower boiling components) be obtained in pure state and most of the evidence as to the chemical nature of many of these so-called "components" as reported in the literature is inconclusive and unconvincing.

Proposed Plan of Research

1. Selection of some particular straight-run petroleum fraction.

2. Subjection of this fraction to further distillation, without cracking, until the separation is as complete as can be obtained in this way.

3. Subjection of the several fractions obtained under 2 to the following processes, systematically and in accordance with the efficiencies shown.

(a) Fractionation by isothermal evaporation at different temperature levels using a stream of inert gas and perhaps accompanied by fractional condensation of the vapors.

(b) Fractional crystallization of the fractions by cooling.

(c) Fractional crystallization from solution in suitable solvents; (1) by cooling, (2) by isothermal evaporation of the solvent at different temperature levels accompanied by condensation of the vapor for recovery of material carried over.

(d) Fractional precipitation from one solvent by addition of another.

Results

THE progress of the separation and the chemical identity of the final products should be established by (1) the freezing behaviour (i. e., time-temperature cooling curve for the material in mass); (2) boiling point by the equilibrium method; and where necessary (4) conversion of the pure material into one of its chemical derivatives and identification thereof.

In cases where the above methods fail to effect complete separation they may perhaps be assisted by suitable chemical treatment to change the chemical nature of some of the components, followed by further fractionation.

The foregoing procedures should be carried out in a quantitative manner so that the final products obtained will account for all of the material started with.

The pure substances eventually obtained and identified will become available for such further research as seems desirable.

Project 7

Catalytic Methods Applied to Petroleum Hydrocarbons

THIS project covers the examination of the hydrocarbon molecule from the standpoint of catalytic investigation. Catalytic studies have recently shown that a catalyst is a convenient agent for exploring the stability of a molecule and the energy quantities involved in the linkage of the respective atoms which go to make up the molecule. A knowledge of such energy relationships is fundamental to a non-empirical attack on the problem of converting hydrocarbon molecules to other chemical products. It

is necessary to know which link in a chain of atoms within the molecule is the weakest, how such links are modified by length of chain or branching, and whether such links of a chain can be modified by association with suitable agents.

One concrete example may illustrate this problem. The position of substitution of a chlorine atom for hydrogen in a long chain hydrocarbon is determined (a) by the energy relationships involved in such substitution and (b) by the resistance of the system to such change. This latter may be modified profoundly by a catalytic agent and it therefore ought to be possible to control such substitution by suitable choice of catalyst.

Similarly, the resolution of complex hydrocarbons into simpler hydrocarbons, the dehydrogenation of such bodies, oxidation and substitution are all problems fundamental to petroleum utilization which require a systematic, comprehensive study from the standpoints of energetics and the catalytic chemist. The project should cover ultimately not only the saturated hydrocarbon but also unsaturated and cyclic compounds since these are found in or are by-products of petroleum.

Chemistry

Project 8

The Effect of Electric Discharge Upon Gaseous Hydrocarbons

INVESTIGATIONS at the Fixed Nitrogen Research laboratory in Washington on the effect of alpha particles on the various lower hydrocarbons, both saturated and unsaturated, have shown that those hydrocarbons, under this influence, possess a very high tendency to polymerization or to condense with the elimination of hydrogen, methane and other lower hydrocarbons, with the result that high hydrocarbons are formed. Methane, ethane, propane, butane, ethylene and acetylene have been studied in this connection and we have good evidence to believe that this particular kind of action is dependent upon gaseous ionization and could be just as readily brought about by any other agency capable of producing ionization.

Plan of Operation

IT, therefore, appears most important to see what can be done by passing different forms of electric discharge through these lower hydrocarbons. These hydrocarbons might be circulated past a zone of corona discharge or through an ozonizer (silent discharge). The resulting products could be collected by refrigeration in the case of liquids and by filtration or precipitation in the case of solids, in another part of the apparatus. We should expect liquid products from the unsaturates but also some solid products from the more highly unsaturated compounds such as acetylene.

Another interesting question would be whether or not hydrocarbons could be entirely removed from the gaseous phase by this process, leaving behind hydrogen sufficiently pure for industrial uses, such as in the synthesis of ammonia or methanol. It should be mentioned parenthetically that it is not at all improbable that reactions similar to this outlined above could also be brought about catalytically, but researches to this end would not be undertaken under this project.

Physics

Project 9

Analysis of Hydrocarbons by the Time Positive-Ray Method

THE apparatus for this work has already been designed in a laboratory in which considerable positive-ray work of other sorts is going on. The chance that the new apparatus will work for this analysis of hydrocarbons is good, and in case it does it will open up for solution a large number of important problems. For example, it will make possible the determination of the precise composition of any mixture of hydrocarbons however heavy, or the precise character of the products of cracking at all temperatures. The apparatus for this work, costing all of $1000 or more, will be provided by the laboratory.

Project 10

Analysis by Fractional Distillation from Absorbent Materials (Charcoal, Silica Gel, etc.), Both of Light and Heavy Members of the Hydrocarbon Series

IT is proposed to employ absorbent agents as a means of separating hydrocarbons possessing properties more or less closely related as to boiling and melting points and as to general solubilities in ordinary reagents. For the lower members of the saturated hydrocarbon series results have already been obtained but not as yet published.

Project 11

Analysis of the Gradual Oxidation Prior to Ignition of Fuels in Internal Combustion Engines, and the Relation of Such Oxidation to Detonation

AN apparatus has been designed, and successfully used, for taking off a sample of the gas in the cylinder of an internal combustion engine at any instant of the cycle. This work is already under way in the laboratory, with promising results, but may have to be discontinued for lack of funds.

Project 12

Accurate Comparison by Viscosity Methods Developed by Millikan of the Viscosities and Hence of the Mean Free Paths of Ring and Chain Hydrocarbons of the Same Molecular Weight and Composition

IT is proposed by this study to bring to light the differences in physical structure between various isomers of hydrocarbons.

This research will require the construction of a new type of viscosity apparatus.

This research, not yet under way, will require the construction of a new viscosity apparatus which will cost about $1000 to construct, alone. It will then need a $500 fellowship to support it.

Project 13

Determination of Physical Properties of Petroleums and Petroleum Products

IT is proposed to determine as accurately as possible the physical properties of a large number of crude petroleums and petroleum products; such for example as specific heats, latent heats at all temperatures, critical data and specific gravities at higher temperatures. All refining engineering work is handicapped by a lack of reliable information of this character.

Chemistry

Project 14

Preparation of Pure Typical Hydrocarbons and a Study of their Behavior When Heated Alone and With Catalysts

IT is proposed first to prepare a number of pure hydrocarbons and then subject them to varying conditions of heat with the purpose in view of ascertaining (1) the possible rearrangement and polymerization of olefines present; and (2) the possible rearrangement and decomposition of the paraffines and the cycle paraffines.

Project 15

Determination of Composition of Southern California Petroleum

IT is planned to study a number of methods leading to the separation of the various components from the crude petroleum. Particularly in view is the study itself of characteristic reactions of these various components when isolated.

Project 16

Isolation and Investigation of Thermo Labile Hydrocarbons Present in Petroleum

ONE aspect of this work is to study the labile hydrocarbons which are present in petroleum and which are responsible for some of the reactions involved in the so-called "cracking" of this material. It is extremely doubtful if the most labile aliphatic hydrocarbons are still present in petroleum, but there is every reason to believe that there are present in this petroleum a large number of highly branched aliphatic hydrocarbons unstable at temperatures around 200°.

Preliminary work has shown that the reaction between a sodium-potassium alloy and a labile hydrocarbon yields the metallic derivative of the corresponding free radical. For example, in the aromatic series tetraphenyl ethane gives this reaction. It has been found that various samples of petroleum distillates yielded small amounts of hydrocarbons which

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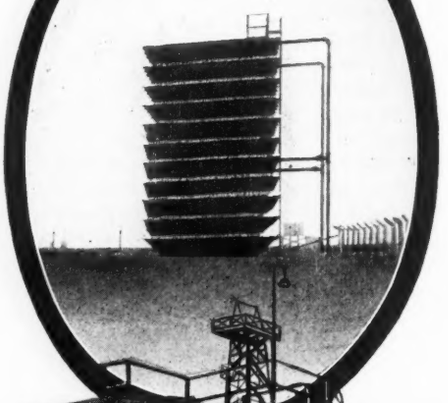

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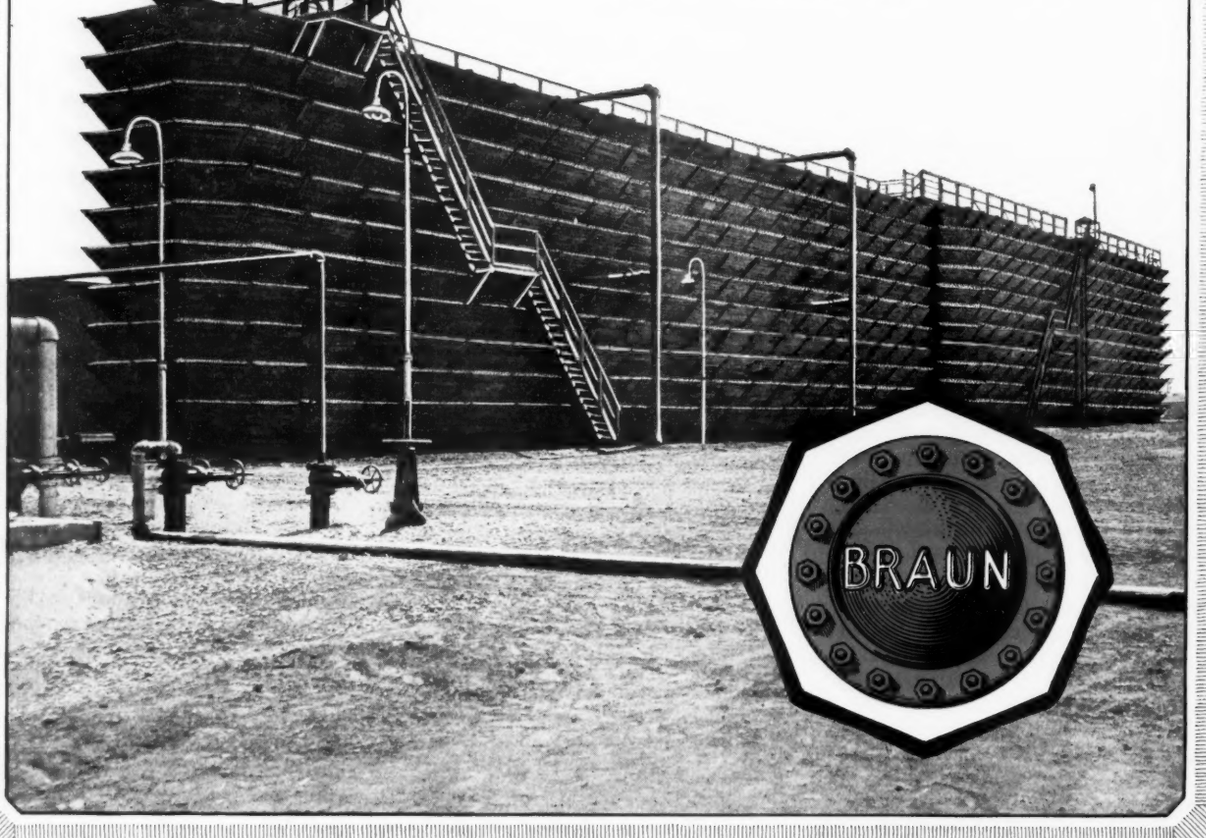

reacted in a similar manner with sodium and potassium alloys.

Plan of Operation

THROUGH the formation of these organo-metallic compounds it is now proposed to isolate the labile hydrocarbons present in petroleum and to study their derivatives. These organo-metallic compounds react with carbon dioxide to form acids, affording thus a convenient method for the isolation of certain of their derivatives. When subjected to moisture these organo-metallic compounds react to produce hydrocarbons originally present in the petroleum, (i. e., the relation of methane to ethane).

If the work of Zeigler on aryl compounds can be duplicated it should be possible to treat the organo-metallic derivatives with iodine or organic dibromides and regenerate the labile hydrocarbons themselves. This aspect of the work is, of course, the most interesting both from the scientific and practical standpoints.

It will be advisable at the outset to prepare certain substances, such as ditortiarybutyl and try their action upon the alloy itself. Undoubtedly a certain amount of synthetical work must be involved in order to prepare compounds that can be used as a basis for these comparison studies.

Project 17

Isolation and Study of the Sulfur Compounds Present in Petroleum

LITTLE is known today of the organic sulfur compounds in petroleum; in fact, the methods for their isolation leave much to be desired.

Plan of Operation

AFTER compilation of data on sulfur compounds in general, it is proposed to study methods of isolation by all possible physical and chemical means. Such as:

a. Careful fractionation with the best columns and control, both at atmospheric pressure and under vacuum.

b. Isolation of the sulfur compounds as heavy metal derivatives or as addition products with heavy metal salts.

c. Conversion into water—soluble products by sulfonation, oxidation, or other chemical processes.

There will be required a number of syntheses of typical organic sulfur compounds closely related to those of possible existence in crude petroleum.

There will be undertaken also comprehensive chemical studies of selected types of organic sulfur compounds with special attention to their reactivity upon heavy chemicals such as those used, or that might be used, in the refining of petroleum products.

Project 18

Non-catalytic Thermal Decomposition of Pure Hydrocarbons and Related Compounds

THIS research will attempt to study the nature of organic thermal decompositions as applied both to saturated and unsaturated hydrocarbons.

It is proposed as a working hypothesis that there may be a "methane system" of compounds, just as there is a "water system" and an "ammonia system" It is well known that groupings such as $=C(OH)_2$ and $=C(NH_2)_2$ are usually very unstable, decomposing spontaneously with the elimination of water or of ammonia. Therefore, it is not unreasonable to assume that the grouping, $=C(CH_3)_2$, is relatively unstable at elevated temperatures, yielding as decomposition products methane and a derivative of ethylene. This idea has been totally unexploited, yet what evidence we have seems to support it. To cite but one instance; methane has been found to be a major product of decomposition of isopentane, whereas it plays a very minor role in the decomposition of n-pentane. Secondary reactions are also encountered, to be sure.

Plan of Operation

IT is realized at the outset that all analogies of the "methane system" to the "water system" cannot be verified by experiment. However, to illustrate some of the possibilities of the plan, the following outline is given. Methane and water are both extremely resistant to heat, and at sufficiently elevated temperatures both decompose directly to their elements. Ethane would be the "alcohol" of the methane system, since a methyl group has replaced a hydrogen of methane. The decomposition of ethane and the decomposition of methanol are very similar.

$CH_3 - CH_3 - \} CH_4 + (CH_2)$ and also $- \} H_2 + CH_2 : CH_2$

$CH_3 - OH - \} H_2O + (CH_2)$ and also $- \} H_2 + CH_2 : O$

By this analogy, ethylene is the "formaldehyde" of the methane system, since it has two hydrogens less than ethane, the "methanol."

Other problems of thermal decomposition which are of interest in petroleum chemistry are the decompositions of the ethers of secondary alcohols with which no work has been done as yet, and also the decompositions of such secondary and tertiary alcohols as are necessary to supplement the existing information about them.

Project 19

A Study of the Relative Rates of Reaction of the Olefins

THE olefins, ethylene, propylene, butylene, etc., are produced in great quantities in the refining of petroleum. The effect of their structure on the relative rates of addition to acids has already been investigated. Experimental data on the relative rates of oxidation, hydrogenation and halogenation of the olefins, under varying conditions of temperature, pressure and catalyst, will here be sought.

Plan of Operation

It is proposed to use a bubbling absorber and measure reaction coefficients for the absorption of olefins by various reagents. It will be necessary to carry out experiments in a rotary

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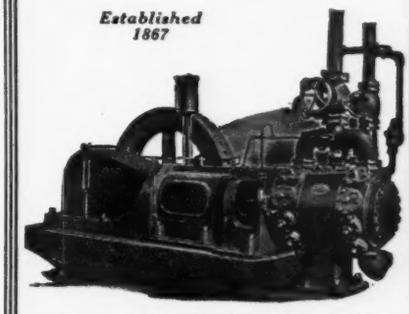

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chamber in order to determine what effect is produced on their reactions by the introduction of the corresponding isomeric olefins as well as by the introduction of similar substances which do not enter into reaction with the reagent.

Project 20

Isolation and Investigation of Nitrogen Compounds Present in Petroleum

THE work of Mabery and Wesson opened up the possibilities in this field and pointed to both aromatic and hydroaromatic compounds, chiefly of the quinoline type, as constituting the main portion of the nitrogen fractions.

Plan of Operation

It will be necessary to repeat the work already done and amplify the processes that applied to methods of separation. If the lower alkylated quinolines of California petroleum consist of hydrogenated heterocyclic rings then dehydrogenation of these compounds should be studied in order to identify them with well known members of the quinoline series. An outline of the research as applied to California petroleum is as follows:

1. Separation of the bases into different fractions.
2. Resolution of these fractions into individual components by the methods discussed.
3. Employment of the Skita method of catalytic reduction on different fractions of bases.
4. Employment of dehydrogenization on fractions of nitrogen bases where hydrides of methylated quinolines are suspected.
5. Oxidation of the fractions and a search for pyridine pentacarborylic acid, methyl pyridine tetracarboxylic acid and beta-methyl quinoline, together with a comparison of these preparations, if obtained, with the corresponding synthetic products.
6. Ring cleavage of both the pyridine and benzene nuclei in any quinoline derivatives isolated in the pure state, in order to determine the distribution of substituting alkyls.
7. Reduction by the Skita method of Combes' 2, 3, 4 thrimethyl quinoline in an attempt to prepare both the tetra- and decahydrides.
8. Synthesis of heptamethyl quinoline and its catalytic reduction.
9. A search for nitrogen compounds other than quinoline derivatives.

Project 21

Determination of Physical and Chemical Properties of all Types of Sulfur Compounds Present in Petroleum

Plan of Operation

THE isolation of many different types of sulfur compounds from petroleum will be undertaken. A study will then be made of their simple reactions to the ordinary chemical reagents. Qualitative and quantitative methods for determining these type sulfur compounds in crude petroleum itself will be studied. Mexican crude oil will be made the subject of this investigation.

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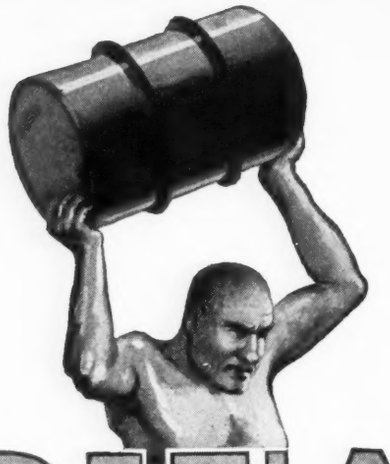

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Indian and National Lose Rate Suite

By Special Corresponent

WASHINGTON, July 3.—The Indian Refining Co. and the National Refining Co. have lost the complaints they brought against the railroads, about three years ago, alleging the rates on crude and refined oil, shipped by them, between Nov. 25, 1920 and Dec. 31, 1921, from points in Kentucky, Kansas and Oklahoma to the refineries at Lawrenceville, Ill., and Findlay, O., were in excess of those authorized by the tariffs.

From a technical transportation point of view the cases were extremely important because they raised the question as to how the rule for making freight rates by combinations on the Ohio and Mississippi rivers should be applied, in the absence of joint through rates. From a money point of view they were not so important, involving only a few thousand dollars.

The companies mentioned routed the traffic via junctions the rates to and from which, when treated by a combination rule designed to prevent multiple increases by the addition of the late Clifford Thorne's compromise flat increase of 4.5 cents per 100 pounds to each factor in the combination, would be lower than the combinations of proportional rates which the railroads claimed were the applicable rates. The freight rate body held with the railroads, namely, that where there were proportional rates they, and not the local rates had to be used in making combinations on through traffic across the two rivers. The commission said that wherever there was a proportional rate it had to be used because, on through traffic it displaced the local rates.

Hundreds, if not thousands of cars were routed by the complaining oil refiners in the hope of getting the benefit of rates lower than the railroads demanded as the proper ones. The differences between the rates claimed by the railroads and by the oil shippers, were 6 cents per 100 pounds.

Sales Staff Meetings Beneficial

DAYTON, O.—Much benefit is derived from meetings held once a month by division managers, managers and salesmen of The Refiners Oil Co. of this city, according to W. E. Talbot, treasurer and general manager. Either a driver-salesman or station salesman is in attendance at each of these meetings and practical selling ideas are exchanged by the men who come in contact with the public. Special meetings are held for truck drivers and station attendants.

NEWBURGH, N. Y.—Samuel B. Corin has organized and is president of the Quassaick Gas & Oil Corp. here, which will distribute Sinclair products. The company will distribute only and does not plan to erect service stations.

Roster of Oil Associations

American Association of Petroleum Geologists. Secretary, F. L. Aurin, Marland Oil Co., Ponca City, Okla.

American Chemical Society, Petroleum Division, Pittsburgh, Pa. Secretary, George A. Burrell.

American Institute of Mining and Metallurgical Engineers, Petroleum Division. 29 West 39th St., New York. Chairman, F. Julius Fohs.

American Oil Men's Association, 624 South Michigan Ave., Chicago, Ill. Walter Willard, Secretary and Manager.

American Petroleum Institute, 250 Park Ave., New York City Secretary, R. L. Welch.

Arkansas Petroleum Club, Secretary, James P. Lavery, Petroleum Supply Co., ElDorado, Ark.

Arkansas-Tennessee Oil Marketers Association. Secretary, R. E. McKellar, care Diamond Oil Co., Memphis, Tenn.

Association of Oil Jobbers of Mississippi, Jackson, Miss. President, R. C. Clark, Independent Oil Co., Tupelo, Miss.

Association of Natural Gas Supply Men, Inc., 905 Oliver Bldg., Pittsburgh, Pa. Secretary, Guy F. Batchelor.

Association of Natural Gasoline Manufacturers, 504 A-B Cosden Bldg., Tulsa, Okla. Secretary, A. V. Bourque.

Association of Producers of Petroleum in Mexico, 17 Battery Place, New York, Director, Guy Stevens.

Cincinnati Oil Club. Secretary, E. V. Weber, care Eureka Oil Co., Cincinnati, Ohio.

Detroit Petroleum Club. Secretary, Frank McSweeney, Cities Service Oil Co., General Motors Bldg., Detroit, Mich.

Eastern Kentucky Oil Producers Association, Ashland, Ky. Secretary, David Browning.

El Paso Petroleum Club. President, A. L. Behringer, Home Oil Co., El Paso Tex.

Georgia-Alabama Independent Petroleum Marketers Association. Secretary-treasurer, W. L. Moore, Wofford Oil Co. of Georgia, Atlanta, Ga.

Greater Chicago Oil Men's Club. Secretary, Mel Keim, Apex Motor Fuel Co., 4555 W. 26th St., Chicago, Ill.

Gulf Coast Independent Oil Producers Association, 403 Goggan Bldg., Houston, Tex. Secretary, T. L. Smith, Jr.

Illinois Petroleum Marketers Association Secretary, G. A. Primm, Chamber of Commerce Bldg., Springfield, Ill.

Independent Oil Men's Association of Massachusetts. Secretary, F. E. Bergfors, care Quincy Oil Co., Quincy Adams, Mass.

Independent Oil Men's Association of New England. Secretary, I. H. Farrar, Berkshire Oil Co., Worcester, Mass.

Independent Oil Marketers Association of Atlanta, Ga. Secretary, J. H. Smitha, care Community Oil Co., Atlanta, Ga.

Independent Petroleum Marketers Association of California, Inc., 930 Marsh-Strong Bldg., Los Angeles, Calif. Secretary and Manager, H. H. Maxson.

Indiana Independent Petroleum Marketers Association. Field Secretary, Sam T. Hurd, Connersville, Ind.

Iowa Independent Oil Men's Association, 225 Fifth St., Des Moines, Ia. Secretary, M. L. Long.

Kansas Oil Men's Association, 423 First National Bank Bldg., Wichita, Kan. Secretary, J. A. Motter.

Kentucky Oil Men's Association, Inc., 610 Trust Co. Bldg., Lexington, Ky. Secretary, Thomas S. Scott.

Michigan Independent Oil Men's Association, 1005 Grand Rapids National Bank Bldg., Grand Rapids, Mich. Secretary, James A. Gilmore.

Mid-Continent Oil & Gas Association, 505 Cosden Bldg., Tulsa, Okla. Secretary, Harry H. Smith.
Kansas-Oklahoma Division, 505 Cosden Bldg., Tulsa, Okla. Secretary, Harry H. Smith.
Louisiana-Arkansas Division, 724 Giddens-Lane Bldg., Shreveport, La. Secretary, Joseph B. Elam.
Texas Division, P. O. Drawer 1567, Dallas, Texas. Secretary, J. P. Laney.

Minnesota Petroleum Association, 638 Builders Exchange, Minneapolis, Minn. Secretary, Paul E. Hadlick.

Missouri Oil Men's Association, 217 Dwight Bldg., Kansas City, Mo. Secretary, George S. Allee.

National Association of Independent Oil Producers, 414 Atlas Bldg., Tulsa, Okla. President, William H. Gray.

National Gasoline Dealers Association, Inc., 280 Madison Ave., New York City. Secretary, Thomas P. McKee, Jr.

National Petroleum Association, Munsey Bldg., Washington, D. C. Washington Counsel, Fayette B. Dow.

National Petroleum Marketers Association, Blum Bldg., 624 South Michigan Ave., Chicago., Ill. President, L. V. Nicholas.

Natural Gas Association of America, 905 Oliver Bldg., Pittsburgh, Pa. Secretary, Guy F. Batchelor.

Natural Gas & Petroleum Association of Canada, Chatham, Ont., Canada. Secretary, S. A. Morse.

Nebraska Independent Oil Men's Association, 416 Terminal Bldg., Lincoln, Neb. Secretary, C. M. Sutherland.

New York State Oil Producers Association, Wellsville, N. Y. President, Lewis H. Thornton.

New York State Petroleum Marketers Association, 1201 So. Salina St., Syracuse, N. Y. Secretary, Benjamin A. Javitz.

North Central Ohio Petroleum Club, 489 Cherry St., Marion, O.

North Dakota Petroleum Association acting head, H. M. Wilson, care International Oil Co., Minot, N. D.

Northwest Independent Oil Association Secretary, C. H. Brown, care Arro Oil & Refining Co., Lewistown, Mont.

Northwestern Pennsylvania Oil Producers Association, 78 Main St., Bradford, Pa. President, A. Edward Booth.

Ohio Gas & Oil Men's Association, 811 First National Bank Bldg., Columbus, O. Secretary, William H. Thompson.

Ohio Petroleum Marketers Association, 616 Commerce Bldg., Columbus, O. Secretary, R. W. Palmer, Accurate Measure Oil Co., 1884 E. Broad St., Columbus, O. Field Secretary, W. C. Hughes

Oil Men's Association. Secretary, F. W Mitchell, Clinton Oil Co., Cleveland, O.

Oil Trade Association of Philadelphia Inc. Secretary, Howard M Rogers, 123 Arch St., Philadelphia, Pa.

Oil Trades Association of New York, Inc., 35 So. William St., New York City. Secretary, Joseph C. Smith.

Oklahoma Oil Jobbers Association, 416 Fidelity National Bank Bldg., Oklahoma City, Okla. Secretary, C. M. Kinney.

Oklahoma Oil Marketers, Inc., P. O. Box 755, Enid, Okla. Secretary, W. W. Blackburne.

Okmulgee District Oil & Gas Association, Okmulgee, Okla. Secretary, Charles I. O'Neill.

Osage Oil & Gas Lessees Association, 505 Cosden Bldg., Tulsa, Okla. Secretary, Harry H. Smith.

Pennsylvania Grade Crude Oil Association, 209 Chambers Bldg., Oil City, Pa. Secretary, R. J. Alexander.

Petroleum Club of Central New York. Secretary, George R. Casey, Crown Oil Co., Syracuse, N. Y.

Pierce County Independent Gasoline & Oil Dealers Association, Executive Secretary, J. H. Stine, 1009½ Pacific Ave., Tacoma, Wash.

Rocky Mountain Independent Oil Men's Association, (formerly Colorado Petroleum Club), 412 Commonwealth Bldg., Denver, Colo. Secretary, A. Overholtzer.

Rocky Mountain Oil & Gas Association, P. O. Box 1559, Casper, Wyo. Secretary C. W. Sparr.

Rocky Mountain Oil & Gas Association, Montana Chapter, 222 Ford Bldg., Great Falls, Mont. Secretary, Walter F. Brittan.

South Dakota Independent Oil Jobbers Association, Sioux Falls, S. D. Secretary, F. H. Buehler, care Dacotah Oil Co., Madison, S. D.

Southern Petroleum Jobbers Association. Secretary, D. C. Patterson, Camden, S. C.

St. Louis Petroleum Club, 1430 So. Vandeventer Ave., St. Louis, Mo. Secretary, R. F. Leinberger, Blackmer Pump Co., St. Louis, Mo.

Springfield Petroleum Club. Secretary Ross Lock, c/o Lock Bros., Oil Co., Springfield, Ill.

State Executives Club. Secretary, Paul E. Hadlick, Minnesota Petroleum Association, 638 Builders Exchange, Minneapolis, Minn.

Technical Club of Oklahoma, 208 Fisher Bldg., Tulsa, Okla. Secretary, R. I. Ginter.

Tennessee Independent Oil Men's Association, Secretary, Tom S. Cooper, c/o Estes-Cooper Oil Co., First St. & L. & N. R. R., Nashville, Tenn.

Texas Independent Oil Men's Association, Secretary, L. A. Greene, care Radio Petroleum Co., Fort Worth, Tex.

West Virginia Oil and Natural Gas Association, Fairmont, W. Va. Secretary-Treasurer, Edwin Robinson.

West Virginia Oil Marketers Association. 513 Peoples Exchange Bank, Charleston, W. Va. Secretary and Treasurer, D. E. Frierson.

Western Petroleum Refiners Association, 504 Cosden Bldg., Tulsa, Okla. Managing Director, Howard Bennette.

Wisconsin Independent Oil Jobbers Association. Field Secretary, R. A. Overholser, Gay Bldg., Madison, Wis.

Wyoming Petroleum Club. Secretary, G. H. O'Donnell, 847 So. Lincoln St., Casper, Wyo.

Lube Company Buys Stations

QUINCY, ILL.—Properties of the Independent Oil Co., Decatur, Ill., consisting of a bulk and six service stations, have been purchased by the Richardson Lubricating Co., with headquarters here. The latter was already operating two service stations at Decatur, and now has bulk and service stations in 10 towns in central Illinois, according to E. D. Richardson, president.

BELLE PLAINE, MINN.—Moba Oil Co., Inc., has added a new tank truck to its equipment, with Elmer Kruschke as the driver.

The company, which is composed of Walter E. Moore and Paul J. Backes reports holding the interest of the motoring public in its station by retaining the standard of quality and service they set in the beginning and carrying no side lines in their business, according to J. A. Schoell, secretary.

Highways leading in and out of Belle Plaine are being paved and improved.

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New Oil Station Construction

Clinton, Okla.—Five service stations are being erected here by C. E. Gannaway, Choctaw St.; William Spaulding, 3117 Choctaw St.; Oscar Brown, 6th & Choctaw Sts.; Ralph Kobel, 8th & Frisco Sts.; E. S. Allen, 13th & Frisco.

* * *

Taylorville, Ill.—Schneiter-Luster Oil Co. is completing its combination service station, automobile sales room and garage here. Building is fire-proof and also includes grease and wash racks, all under one roof.

* * *

Harrisburg, Ill.—Charles Oatman reports that three new service stations are being built here, one at Granger and South Sts., one at Main and College and one at Robison and Leeford Sts.

* * *

Vicksburg, Miss.—A $25,000 service station will be built by Charles E. Crook and E. C. Neill, proprietors of the Home Oil Co., on property recently purchased.

* * *

Princeton, W. Va.—Seneca Trail Motor Co. a new company financed by Washington, D. C., and Baltimore capital, erecting filling station.

* * *

St. Joseph, Mo.—Barnsdall Refining Co., which has had bulk station here for three years expects to build several filling stations.

* * *

Ashboro, N. C.—Gulf Refining Co., Pittsburgh, Pa., is building filling station and wholesale division offices.

* * *

Dayton, O.—The Refiners Oil Co. is erecting station at Columbus, which will give it total of 10 stations there.

* * *

McAllen, Tex.—T. W. Doster, Pharr, Texas, agent for Humble Oil & Refining Co., to build filling station.

* * *

Metter, Ga.—Metter Oil Co. building service station at Cobbtown, Ga. B. B. Jones is owner of company.

* * *

Crawfordsville, Ind.—G. W. Deer & Son Corp. is building filling station with grease pits under cover.

* * *

Mankato, Minn.—An office building will be erected here by Standard Oil Co. of Indiana.

* * *

Pittsburgh, Pa.—Gulf Refining Co., has bought a site at Sharon, Pa., for filling station.

* * *

Springfield, Mass.—Standard Oil Co. of New York seeks permit for filling station.

* * *

Louisville, Ky.—Stoll Oil Refining Co. is erecting two service stations here.

and two stations at Cincinnati. With the two new ones in Louisville, the company will have 15 stations here, according to William A. Stoll, treasurer.

* * *

Lansing, Mich.—Wolverine Oil Co. is building station here. Bulk storage for three grades of motor oil has been installed, according to Bruce J. Maguire, president.

* * *

Des Plaines, Ill.—W. L. Plew & Co. will erect filling station here, which the company claims, will be different.

* * *

Douglas, Wyo.—H. D. Brockley completing filling station which will handle Texaco products.

* * *

Binghamton, N. Y.—S. M. Elliott is building bulk station with 100,000 gallons storage capacity.

* * *

Silver City, N. Mex.—Magnolia Petroleum Co., Dallas, Tex., is erecting filling station here.

* * *

Oswego, Kan.—Nelie Nafus, city engineer, bought property for filling station.

* * *

Rochester, Minn.—Sinclair Refining Co., Chicago, will build filling station here.

* * *

Vandalia, Mo.—Pierce Petroleum Corp., St. Louis, to build filling station.

* * *

Lansing, Mich.—Central Service Co. takes over property for filling station.

* * *

Carrington, N. D.—Standard Oil Co. of Indiana to build filling station.

* * *

Mayville, N. Y.—Gravit Bros. building filling station at Shore Acres.

* * *

Norfolk, Neb.—Continental Oil Co. to build $12,500 filling station.

* * *

Ellendale, N. D.—Bartles-Scott Oil Co. plans to build filling station.

* * *

Brenhan, Tex.—The Texas Co. leased property for filling station.

* * *

Clarion, Ia.—Wright County Oil Co. is building filling station.

* * *

North Loupe, Neb.—Ira Manchester erecting filling station.

* * *

Ironwood, Mich.—People's Oil Co. building filling station.

* * *

Lawton, Okla.—Wilson & Whitney to build filling station.

* * *

San Marcos, Tex.—Ross Arnold building filling station.

* * *

Alliance, Neb.—C. A. Baum building filling station.

* * *

Denison, Tex.—A. Ammer building filling station.

— write for a copy of the new TELESCOPER working model —

ECONOMY LIFTERS

Stackers — Tiering Machines —Portable or Stationary

Economy Engineering Co.

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GULF Refining Company

General Sales Offices
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GASOLINE
NAPHTHA
GAS OILS
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ASPHALT

Fuel Oil--Lubricating Oils

CYLINDER ENGINE
CORDAGE

RED AND PALE PARAFFINE OILS

Quality

CHAMPLIN GUARANTEED STRAIGHT-RUN GASOLINE

CHAMPLIN Quality is the result of an ideal—an ideal or desire to refine and sell the very finest gasoline that can be made.

Quality to us means the best product available. We are producing Champlin Guaranteed Straight Run Gasoline because not only we but hundreds of good jobbers—and their customers—consider this gasoline unequalled.

If you, too, have a quality ideal, and desire to sell the best gasoline available today, let us refer you to a few of our jobbers who can tell you what Champlin Quality means to them.

All Champlin Products are Quality Products and you will find Champlin Motor Oil an ideal running mate of Champlin Gasoline.

Let us demonstrate Champlin Quality!

CHAMPLIN REFINING CO.
ENID, - - - OKLAHOMA.

Here & There

National Petroleum News

C. E. Whiddon, president of the Greenville Woco-Pep Co., Greenville, Ala., recently returned from a week's vacation in Florida, where he went to fish. Whether his statement can be labeled a fish story or not is up to the reader, but Mr. Whiddon says that the fish are so numerous in Florida that you have to hide behind a tree to bait your hook.

Mr. Whiddon is optimistic over business conditions in his territory and reports that several filling stations have just been completed while others are being erected. Graded roads lead out of town in every direction and almost everyone owns a car.

* * *

Earl Coryell, manager of the Coryell Oil Co., Lincoln, Neb., was a member of the Lincoln drill team which went to the Shriners' convention at Philadelphia recently. Mr. Coryell gives it as his belief, according to a recent issue of the "Weekly Nioma Service Bulletin," publication of the Nebraska Independent Oil Men's Association, that "'Western business methods cannot be compared with the antiquated customs of the east" and states that "Nebraska is still a good state in which to do business."

* * *

William Gholson, formerly with the Comar Oil Co. at Tonkawa, Okla., has succeeded Glen Harroun as field superintendent in the Garber field for the Roxana Petroleum Corp. properties at Covington, Okla. Mr. Harroun has become connected with the Sinclair Oil & Gas Co. in the same field.

* * *

Jack Anderson, who was formerly salesman in the Grand Rapids, Mich., division for the Standard Oil Co. of Indiana, Chicago, has resigned to enter the clothing business with his father, of the George A. Anderson Co.

* * *

J. O. Corner, manager for the Trans-continental Oil Co. at Pittsburgh, Pa. previous to that company selling its stations in that district, has been transferred to Sioux City, Ia. as division manager.

* * *

W. L. Bugbee, formerly branch manager at Mason City, Ia. for the Hawkeye Oil Co., Waterloo, is now local agent at Omaha, Neb. for the Marland Refining Co., Ponca City, Okla.

* * *

W. B. Rodman, formerly salesman at Grand Rapids, Mich., for The Texas Co., has been transferred to Champaign, Ill., where he is agent for that company.

* * *

W. H. Lilly has opened a branch consulting engineering office at 601 Atlas Life Bldg., Tulsa, Okla.

Paul McCann, assistant manager of the Liberty Oil Co., Alexandria, Ind., married Miss Evelyn Thompson on June 19 at the home of the bride's aunt and uncle at Anderson, Ind. Mr. and Mrs. McCann left for a wedding trip by motor through Indiana, Kentucky, Ohio, Michigan and Canada and on their return will make their home at Alexandria.

Mrs. McCann is general manager of the Dura-Bull Glove Corp., at Alexandria, according to J. E. McDaniel, owner of the Liberty Oil Co.

* * *

M. J. Grogan, sales manager of the Louisiana Oil Refining Corp., Shreveport, La. has been made assistant to the vice president, C. M. Bennett. The promotion was effective on June 15.

Mr. Grogan has been with the company about two years. Prior to that time he was manager of the north Texas offices of the Acme Petroleum Co.

* * *

Carl Wilson, of the Winterset Oil Co., Winterset, Ia., recently married Miss Helen Powers of Lorimor, Ia., after which he left his oil station to make a motor trip to southern points. While in Oklahoma, Mr. Wilson expects to stop at Quapau to look after business interests, according to J. L. Brooker, a member of the company.

* * *

E. D. Gallagher, formerly in the refinery sales department of the Continental Oil Co., Denver, and L. R. Green, formerly with the Shaffer Oil & Refining Co., Chicago, are representing the Inter-State Oil Co., Kansas City, Kan., in Missouri, Kansas and Iowa.

* * *

Charles M. Sutherland, secretary of the Nebraska Independent Oil Men's Association, Lincoln, has been on a week's trip in the western part of Nebraska, which ended at Scottsbluff. He set out about the middle of June.

* * *

Albert A. Scheg, who has been for four years advertising manager of the Oil Bulletin, has become part owner and general manager of the California Oil World, which is published at Los Angeles.

* * *

John McE. Ames, president of the Kanotex Refining Co., Arkansas City, Kan., has left for the East for a month's vacation.

* * *

George W. Ryder, formerly salesman with the Sun Oil Co., is now with the Sinclair Oil Co. at Boston, Mass.

* * *

John W. Merritt, consulting geologist, has opened a branch office at 927 Slattery Bldg., Shreveport, La.

The
NATIONAL REFINING COMPANY
PETROLEUM PRODUCTS

THREE MODERN REFINERIES:
Marietta, Ohio Refinery
operated on Pennsylvania Crude
Findlay, Ohio Refinery
operated on Ohio Crude
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operated on Midcontinent Crude

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4 cubic feet
Large ball bearings
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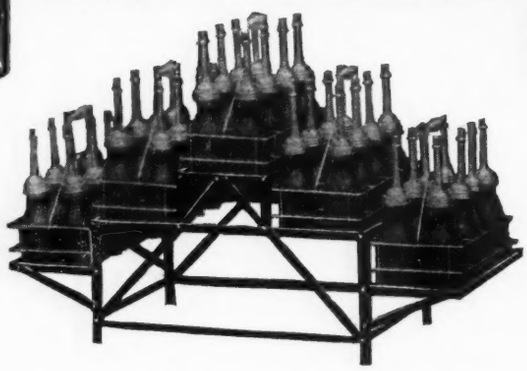
MOTOR OIL DISPENSERS



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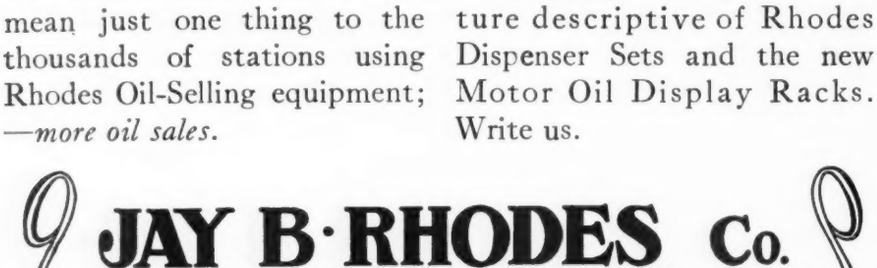
Rhodes Motor Oil Dispensers are always "up front" in the filling station and we mean that literally. But why?

Are they always suggesting oil? Yes. Businesslike in appearance? Yes. Attractive and colorful? Yes. Convenient and speedy? Very.

But these features, summed up, mean just one thing to the thousands of stations using Rhodes Oil-Selling equipment; —*more oil sales.*

We'll gladly send you literature descriptive of Rhodes Dispenser Sets and the new Motor Oil Display Racks. Write us.

JAY B·RHODES Co.
KALAMAZOO, MICHIGAN.



Oil Patents Issued Recently

Production

Polish-Rod Clamp.—Rex G. Hamaker, Houston, Tex. Filed Aug. 24, 1925. No. 1,586,622.

Pipe Puller.—James E. Stalsby and John R. Martin, Houston, Tex., assignors to W-K-M-Co., Houston. Filed Oct. 10 1924. No. 1,586,852.

Swivel Rope Socket.—Philip August Schmuck, Tulsa, Okla. Filed May 14 1925. No. 1,586,920.

Well-Drilling Equipment.—Elvin E. Townsend, Watsonville, Cal. Filed Feb. 18, 1924. No. 1,586,923.

Combined Control Head and Snuffer.—Paul Arbon, Tulsa. Filed Mar. 3, 1924. No. 1,586,956.

Deflector for Slip-Actuating Weights.—Charles S. Crickmer, Dallas, Tex., assignor to The Guiberson Corp., Dallas, Tex. Filed Apr. 13, 1925. No. 1,586,968.

Deflector for Slip-Actuating Weights.—Charles S. Crickmer, Dallas, Tex., assignor to The Guiberson Corp., Dallas, Tex. Filed Apr. 13, 1925. No. 1,586,969.

Well-Capping Device and Control Head.—Albert Orvall Hessemer, Fullerton, Cal. Filed Feb. 18, 1924. No. 1,586,992.

Fishing Tool.—Gustavus A. Montgomery, Titusville, Pa., assignor to Titusville Forge Co., Titusville, Pa. Filed Feb. 25, 1924. No. 1,587,021.

Drill Jar.—Gustavus A. Montgomery, Titusville, Pa., assignor to Titusville Forge Co., Titusville, Pa. Filed Feb. 25, 1924. No. 1,587,022.

Oil-Well Control-Head Valve.—Benjamin F. Palmer, Tulsa, Okla., assignor to Paul Arbon, Tulsa, Okla. Filed Feb. 23, 1924. No. 1,587,030.

Impact Drill.—John A. Zublin, Los Angeles, Cal. Filed Aug. 9, 1922. No. 1,587,265.

Means for Forming a Well Bore.—John A. Zublin, Los Angeles, Cal. Filed Nov. 14, 1922. No. 1,587,266.

Casing-Head Apparatus.—Roy Taylor, Los Angeles, Cal., assignors of one-half to David A. Cant, Los Angeles, Cal. Filed Apr. 1, 1925. No. 1,587,441.

Refining

Method of and Apparatus for Continuously Separating Petroleum Sludge.—Ingenuin Hechenbleikner and Thomas C. Oliver, Charlotte, N. C. Filed Mar. 20, 1923. No. 1,586,801.

Art of Converting Hydrocarbon Oils into Lower Boiling Products.—Frank A. Howard, Elizabeth, N. J., assignors to Standard Development Co. Filed Aug. 16, 1922. No. 1,586,994.

Treating Mineral Oils.—George L. Fogler, Tulsa, Okla. Filed July 17, 1923. No. 1,587,111.

Art of Distillation.—Joseph Schneible, Chicago, Ill., Beatrice Schneible-Ingram, administratrix of said Joseph Schneible, deceased, assignor to Claude D. Schneible, K. F. Schrerer, and Benjamin B. Schneider, as trustees under the name of The Schneible Trust. Filed Dec. 7, 1920. No. 1,587,188.

Process of Treating Hydrocarbons.—Roy Cross, Kansas City, Mo. Filed Feb. 9, 1923. No. 1,587,491.

Miscellaneous

Regenerative Air or Gas Preheater.—Fredrik Ljungstrom, Lidingo-Brevik, Sweden, assignor to Aktiebolaget Ljungstroms Angturbin, Stockholm, Sweden. Filed Aug. 3, 1922. No. 1,586,816.

Regenerative Air Preheater.—Fredrik Ljungstrom, Lidingo-Brevik, Sweden, assignor to Aktiebolaget Ljungstroms Angturbin, Stockholm, Sweden. Filed Aug. 3, 1922. No. 1,586,817.

Outlet Valve for Tank Cars.—Abram E. Smith, New York, N. Y. Filed Jan. 15, 1923. No. 1,587,245.

Rotary Oil-Shale Retort.—Julius H. Toupet and Vanton O. Foulk, Pittsburgh, Pa., said Toupet assignor to said Foulk. Filed April. 9, 1924. No. 1,587,256.

Telltale for Tanks.—George Elwyn Deatherage, Detroit, Mich. Filed Apr. 23, 1925. No. 1,586,182.

Flame Arrester.—Hubert H. Hall, San Francisco, Calif., assignor to Standard Oil Co., San Francisco. Filed Dec. 6, 1924. No. 1,586,195.

None-collapsible Float for Liquid-Lever Controls.—Edward Everett Simpson, Tulsa, Okla. Filed May 4, 1925. No. 1,586,476.

Gassing Slightly

By Rollin Stone

Mr. Stone Receives Honorary Degree

Editor's Yawp: Followers of Mr. Stone will be delighted to hear of the honor that has come his way. Like many another prominent figure, his contribution to science and industry has been recognized by an educational institution and he has been invested with a degree, A. P. I., not Baume.

The seat of learning and crapshooting which has honored both itself and Mr. Stone in throwing a degree at him is the Polar Beaver Barber College, of East Wryneck, N. J. A word of explanation is necessary. Since the picture of Mr. Stone shown at the top of this page was fabricated, he has altered to considerable extent his facial meadow. It was not a complete victory for the Doctors of Dermutation, for Mr. Stone merely laid bare certain selected areas of the bush somewhat in the style of Gen. Burnside or Gen. Sideburn, durned if we ever could keep that man's name straight.

Mr. Stone, B. S., As Is

Mr. Stone was made an honorary B. S. (Bachelor of Shaving), summa cum laude, also VII cum XI.

An Impressive Gathering

THE scene was a striking one, the strike having been ordered the day before when a dispute arose between members of the tonsorial profession and an infuriated public over the question of extra charge for neck shaves. Prince Oscar of Sweden headed the corsage of distinguished men gathered to pay tribute to one who wil bounce down the corridors of history as scientist, poet, diplomat and captain of industry. The prince attempted to come incognito but it broke down and he was forced to take a street car transferring on 32th St. Other famous personages present were Calvin Coolidge, of Vermont; William Howard Taft, of Washington; Mussolini, Laura Jean Libbey, Emma Goldman, James Eads Howe, John Quincy Adams (former president) one or two state oil inspectors and the Happiness Boys.

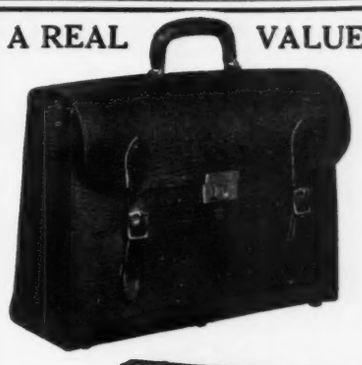
The room was handsomely decorated with clusters of shaving brushes and copies of Whiz Bang. The arena where the trouble broke out was inclosed by hot towels tied end to end. With Mr. Stone in the chair, collar and tie off and that collar button mark on his neck exposed to view, Doctor Occiput, head of the college, approached the victim of this mediaeval cruelty and made the presentation speech. It ran as follows:

"It is with mingled feelings of joy and cooperation that I today discharge the duty that a lazy world has too long neglected. Mr. Stone should have been honored years ago. His achievements are so many that I am with difficulty prevented from being reminded of a story of two other fellows. Mr. Stone, whom you see before you, peering through the lather, is none other than the founder of the Standard Oil Co. He also invented the horseless buggy, formulated the multiplication table and was ex-officious assistant vice-chairman of the Committee of Eleven. He has, of course, amassed an enormous fortune in these several occupations, the royalty on the multiplication table alone amounting to so much that nobody can understand the amount. He bears himself with becoming modesty and because of his fondness for pipe smoking, he is the darling of prominent movie queens.

"I take much pleasure, therefore, in conferring honor to whom honor is long overdue. Honored sir, take this elegantly engraved B. S. and watch that the pipe lines do not deduct more than two per cent for it. Comb it wet or dry?"

Assistant Editor's Note: Owing to the length of the introductory remarks, there is no space left for Mr. Stone's speech of acceptance. He told a couple of funny jokes, including the one you heard in the smoking car the other night, put himself squarely on record as favoring all kinds of morality and delighted the alumni of the college by showing that he still knows how to use a hone. His complete address may be consulted in the library of Colgate College.

A REAL VALUE



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L-U-C-E 302K Folio is made of heavy, double weight muleskin, with reinforced bottom and strong lock, handle and straps. The edges are turned and lock stitched. One of the 3 roomy pockets contains an inner Case which holds 6 four oz. bottles and 5 grease jars. It is covered with washable Keratol and lined with velvet. Your name embossed in gold *free*. Satisfaction *guaranteed*.

Other Styles in our FREE Catalog

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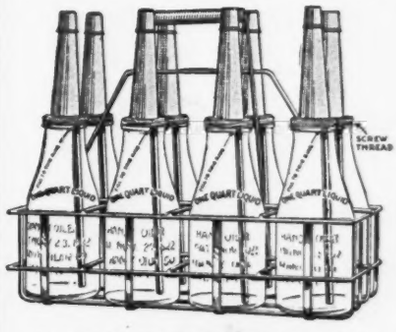
The Handy Oiler



THE public today demands that you give them quick, clean service. This you can do by dispensing your lubricating oils with Handy Oilers, and improve the most valuable asset to your business, "Service".

Handy Oilers are marked to pass the inspection of the Division of Weights and Measures in each state where sold.

These prices are subject to the regular discounts.

LIST PRICES

Complete Outfit	$10.00
Handy Oiler Container and Spout	1.00
Basket	2.50
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Gasket	.05
Dust Cap	.10

Manufactured by

Handy Oiler Co.

Danville, Indiana

Purchase from your jobber if possible. If he will not supply you, we will ship direct.

THE SECOND OF A SERIES OF IMPORTANT MESSAGES

The Chapman Type '600"
Chrome Nickel Steel Gate Valve for Refinery Service

is designed for enduring service.

With an *elastic limit* of 75,000 lbs. per sq. in. and a *tensile strength* of 110,000 lbs. the Chrome Nickel steel used has proven in service that it stands up long after the average valve is sent to the junk pile. Chapman Chrome Nickel is stronger than forged steel

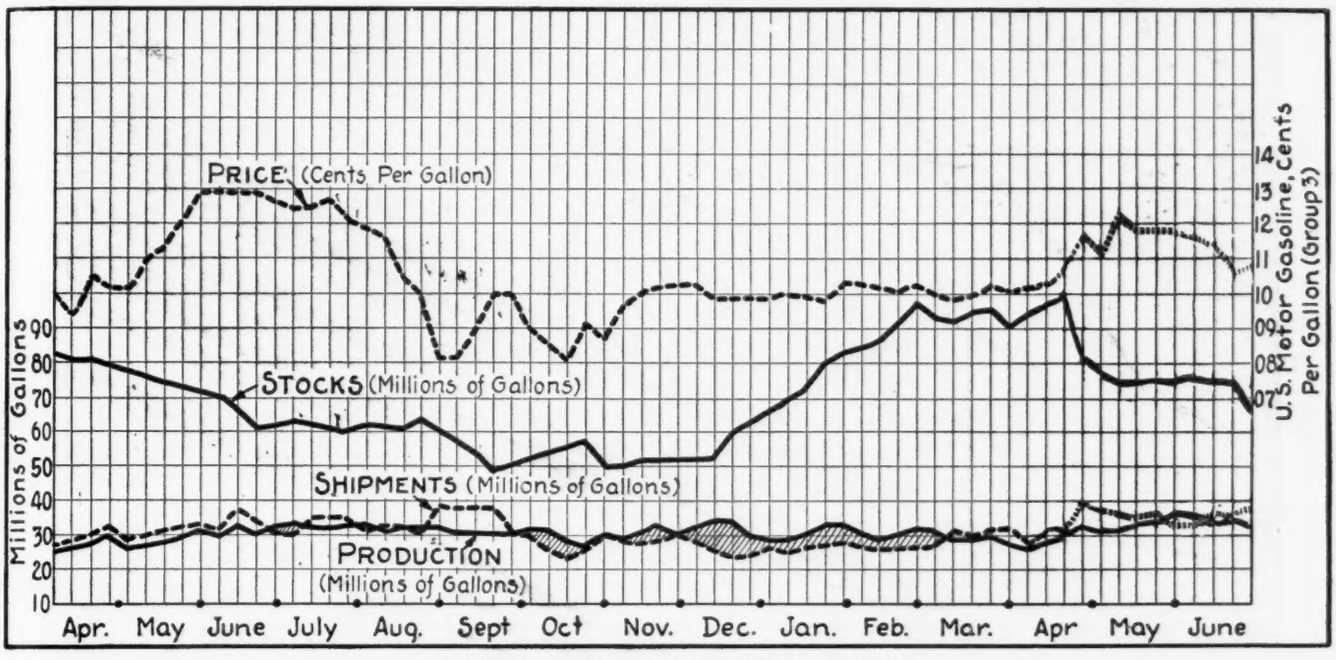
CHAPMAN

Refinery - Tank Wagon Markets

National Petroleum News

Barometer of the Mid-Continent Gasoline Markets Week Ending July 3

(Figures on Stocks, Shipments and Production taken from National Petroleum News weekly compilation of Mid-Continent Refinery Operations.)


PRICE (Cents Per Gallon)
STOCKS (Millions of Gallons)
SHIPMENTS (Millions of Gallons)
PRODUCTION (Millions of Gallons)
Millions of Gallons
U.S. Motor Gasoline, Cents Per Gallon (Group 3)
Apr. May June July Aug. Sept Oct Nov. Dec. Jan. Feb. Mar. Apr May June

(Shaded area above represents additions to stocks)

Better Buying Firms Mid-Continent Gasoline

Staff Special
TULSA, July 3

UNDER the stimulus of outside purchases by one or more large refiners to take care of their reported increased service station and jobber trade and the steady though not unusually heavy buying by jobbers practically the entire week, the Mid-Continent refinery market was stronger today than it has been for the last month.

The Skelly Oil Co. on Friday purchased approximately 1,500,000 gallons of 58-60 U. S. Motor gasoline from Kansas and Oklahoma refiners at 10¾ cents a gallon, Group 3. Most of the purchase, however, was placed with Kansas refiners. The same day the White Eagle Oil & Refining Co. sent out inquires for approximately 50 cars of U. S. Motor and although reports were prevalent that they had bought at least part of this lot, verifications of the purchases were lacking Saturday. A third large Mid-Continent refiner was reported to have bought some motor but the amount was not divulged.

While this buying developed, jobbers had been sending in orders right along. One large northern jobber made some fair sized purchases of U. S. Motor at 10¾ cents, Group 3, and also bought some 60-62, 400 end point gasoline at 11½ cents. The Tulsa representative of this jobber said his employer felt that gasoline bought at these prices was a good purchase for over the first half of July in view of the expected draft on stocks for the July 4 business.

July Trade May Be Better

THE trade generally, however, is wondering how much of the jobber buying has been to replenish stocks after the holiday drafts. If the buying was primarily for that purpose, several refiners are not inclined to feel optimistic over the outlook for July. If most jobbers ,stocks ae getting low these refiners say July business may be better than June.

A majority of refiners believes that next week will be the key week for the first half of the month. While they do not overlook the fact that the market has a tendency to sag after July 4 business has been cleared, they point to two or three factors which they think will prevent a recurrence this year.

In the first place refiners have been habitually curtailing their crude runs around the first of each month and gradually increasing them later. It is common gossip in the refinery area that refiners will cut their runs at least 15 per cent. This reduction naturally will cut down output while the many orders placed last week will take up some of the slack. Jobber buying is expected to hold over for two or three days after the Fourth.

First Hot Weather Recorded

THE northern and eastern portions of the consuming territory are experiencing the first real warm weather of the year. Warm weather naturally will increase gasoline consumption. Refiners believe jobbers accordingly will have to come into the market regularly and for larger purchases since they doubt the hand-to-mouth buying they've practiced since last May will take care of the increased consumption.

On the other hand the possibility of a tank wagon price reduction is being discussed. With gasoline prices at their present level jobbers have a margin of from 4 to 6 cents per gallon, not considering any Q. D. A. or "dump" contracts they may possess.

If refiners cannot hold their gasoline prices on the present level the margin will become wide enough to tempt some jobbers to begin under-selling competi-

(Continued on page 117)

EMPIRE
REFINERIES, INC.

CITIES SERVICE OILS

ONCE-ALWAYS

PETROLEUM PRODUCTS

A KIND OF OIL FOR EVERY PURPOSE

QUALTIY AND SERVICE GUARANTEED

SUBSIDIARY CITIES SERVICE COMPANY

General Offices: TULSA, OKLA.

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Chicago New York Philadelphia Cleveland St Louis

St Paul Kansas City Atlanta New Orleans Ft Worth Toronto

Refinery Markets on Light Oils and Lubricants

Pennsylvania, Oklahoma, North and South Texas, Louisiana, Arkansas, California

GASOLINE AND NAPHTHA

PENNSYLVANIA	Prices July 6	Prices June 28	Prices June 21
52-54 Naphtha	13 -13¼	13½-13¾	13½-13¾
54-56 Naphtha	13¼-13½	13¾-14	13¾-14
58-60 Gasoline	13¼-13¾	-14	14 -14½
60-62 Straight-run gasoline	14 -14½	14½-15	14¾-15
64-66 Straight-run gasoline	14¾-15	15 -15¼	15¼-16
68-70 Straight-run gas. 350-360 E.P.	15 -15½	15½-16	15¾-16¼
68-70 Straight-run gas. 305-320 E.P.	19 -20	-19	18 -19
OKLAHOMA			
48-50 450 E. P. naphtha	-10¾	-10¾	-11¼
50-52 450 E. P. naphtha	-10¾	-10¾	-11¼
56-58 450 E. P. gasoline	10½-10¾	-10½	10⅞-11
56-58 U. S. Motor gasoline	10⅞-11	10¾-10⅞	11 -11⅛
58-60 450 E. P. gasoline	10⅝-10⅞	10½-10⅝	11 -11⅛
58-60 U. S. Motor 437 E. P.	-11	10⅞-11	11⅛-11½
60-62 400 E. P. gasoline	-11¾	11¾-12	11¾-12
64-66 390 E. P. gasoline	-12	-12	12 -12¼
64-66 375 E. P. gasoline	-12¼	12 -12¼	12 -12⅜
68-70 350-360 E. P. gasoline	-12¾	12½-12¾	12¾-12⅞
64-66 437 E. P. blend	-10½	10¾-10¾	-11
KANSAS*			
58-60 U. S. Motor gasoline	11 -11½	11 -11½	11½-11¾
64-66 375 E. P. gasoline	12½-12¾	†12½-12¾	13 -13¼

*F. O. B. refinery Kansas destination.

NORTH TEXAS			
48-50 450 E. P. naphtha	-10¾	-10¾	10¾-11
56-58 450 E. P. gasoline	-10½	10¾-10½	10¾-10⅞
58-60 450 E. P. gasoline	10½-10¾	10½-10¾	10⅞-11
56-58 U. S. Motor gasoline	10⅝-10¾	10¾-10¾	-11
58-60 U. S. Motor gasoline	10¾-11	10¾-11	11 -11½
64-66 390 E. P. gasoline	-12	-12	-12
64-66 375 E. P. gasoline	12 -12¼	12 -12¼	12⅛-12⅜
68-70 350-360 E. P. gasoline	12½-12¾	12½-12¾	-12¾
NORTH LOUISIANA			
58-60 U. S. Motor 437 E. P.	-11½	11½-11¾	-12
ARKANSAS			
58-60 450 E. P. gasoline	11 -11¼	-11¼	-11¾
58-60 U. S. Motor gasoline	11¼-11½	-11½	-12
64-66 375 E. P. gasoline	.....	.....	-13
CALIFORNIA			
54-61 U. S. Motor gasoline	12½-13	12½-13	12½-13
42-45 Engine distillate, 445-480 E.P.	10 -10½	10 -10½	10 -10½

Note: This is without the 2-cent state tax included in the price of California refiners for shipments within the state.

NEW ENGLAND (F. O. B. Boston and Fall River)			
58-60 U. S. Motor gasoline	-13½	-14	-14⅛

NATURAL GASOLINE

(Note: End point of all grades, not over 375° F.)

OKLAHOMA			
Grade Double A	- 8¼	- 8½	8¼- 8⅜
Grade A	- 8¼	- 8½	8¼- 8⅜
Grade Double B	- 8	- 8¼	8⅛- 8¼
Grade B	- 8	- 8¼	8⅛- 8¼
Grade C	7¾- 8	- 8	8¼- 8½

NOTE—Specifications adopted by Ass'n. of Nat. Gaso. Manufacturers
Grade Double A—80-87.9 gravity, 90% recovery, not over 375 E. P.
Grade A—72-79.9 gravity, 90% recovery, not over 375 E. P.
Grade Double B—84-92 gravity, 85% recovery, not over 375 E. P.
Grade B—76-83.9 gravity, 85% recovery, not over 375 E. P.
Grade C—80-90 gravity, 78% recovery, not over 375 E. P.

NORTH LOUISIANA			
*Grade Double A	8½- 8¾	9 - 9¼	9½- 9¾
*Grade Double B	- 8½	- 9	- 9½
*Grade C	- 8	- 8¾	- 9½

*F. O. B. Monroe District.

NORTH TEXAS			
*Grade Double A	- 8¼	- 8½	8¼- 8⅜
*Grade A	- 8¼	- 8½	8¼- 8⅜
*Grade Double B	- 8	- 8¼	8⅛- 8¼
*Grade B	- 8	- 8¼	8⅛- 8¼
*Grade C	- 7¾	- 8	8¼- 8½

*F. O. B. Breckenridge.

CALIFORNIA			
78-84° 375 E. P.	15½-16	15½-16	15½-16
PENNSYLVANIA			
68-70 Grav. 437 E. P.	14 -14½	14 -14½	14 -14½
64-66 Grav. 437 E. P.	14 -14½	14 -14½	14 -14½
60-62 Grav. 437 E. P.	14 -14½	14 -14½	14 -14½
68-70 Grav. 420 E. P.	14½-15	14½-15	14½-15

BURNING OILS

PENNSYLVANIA			
45 Water White Kerosene	9 - 9½	10 -10¼	11 -11¼
46 Water White Kerosene	9½-10	-11	11½-12
47 Water White Kerosene	10¼-10½	11½-11¾	12¼-12½
OKLAHOMA			
41-43 Water White Kerosene	*5¼- 5¾	5¾- 6¼	6¾- 7¼
42-44 Water White Kerosene	*6 - 6½	*6½- 7	7½- 7¾
KANSAS			
41-43 w. w. kerosene	6 - 6½	-*7	8 - 8½
42-44 w. w. kerosene	- 7	-*7½	9 - 9¼

†Quotations only, no sales recorded.
*Nominal

NORTH TEXAS			
41-43 Water White Kerosene	5¾- 5½	5¾- 6¼	7 - 7¼
NORTH LOUISIANA			
41-43 Water White Kerosene	6 - 6¼	7 - 7¼	8¼- 8½
ARKANSAS			
41-43 Water White Kerosene	6 - 6¼	7¼- 7½	8¼- 8½
CALIFORNIA			
38-40 Water White Kerosene	7 - 8	7 - 8	7 - 8
NEW ENGLAND			
*40-43 Water White Kerosene	-10¾	-11	-11

NEUTRAL OIL

PENNSYLVANIA (Viscosity at 70° F.)			
200 Vis. No. 3 Assoc. Filt	28½-29½	29½-30	29½-30
180 Vis. No. 3 Assoc. Filt	26½-27½	27½-28	27½-28
150 Vis. No. 3 Assoc. Filt	23½-25	24 -25	24½-25½
(Non-Viscous)			
34 Grav. 350-360 Flash	8 - 8½	8 - 8¼	7¾- 8
36 Miners Neutrals 300-305 Flash	7½- 7¾	7½- 7¾	7½- 7¾

OKLAHOMA (Viscosity at 100° F.)			
100 Vis. No. 2 color	7 - 7½	7- 7½	7 - 7½
150 Vis. No. 3 color	9 -10	9 -10	9 -10
150 Vis. No. 4 color	- 9¾	- 9¾	- 9¾
180 Vis. No. 3 color	10½-11½	10½-11½	10½-11½
180 Vis. No. 4 color	9¾-10½	9¾-10½	9¾-10½
180 Vis. No. 5 color	10 -10¾	10 -10¾	10 -10¾
200 Vis. No. 3 color	11¾-12½	11¾-12½	11¾-12½
200 Vis. No. 4 color	-11½	-11½	-11½
200 Vis. No. 5 color	9¾-11¼	9¾-11¼	9¾-11¾
220 Vis. No. 3 color	12 -13½	12 -13½	12 -13½
220 Vis. No. 4 color	-13	-13	-13
220 Vis. No. 5 color	12 -12¾	12 -12¾	12 -12¾
240 Vis. No. 3 color	14 -15	14 -15	14 -15
240 Vis. No. 4 color	-14½	-14½	-14½
240 Vis. No. 5 color	13 -14	13 -14	13 -14
280 Vis. No. 3 color	16 -17	16 -17	16 -17
280 Vis. No. 4 color	-16½	-16½	-16½
280 Vis. No. 5 color	15 -16	15 -16	15 -16
300 Vis. No. 5-6 color	-17	-17	-17

GULF COASTAL (Viscosity at 100° F; cold test 0)			
100 Vis. No. 2 Color Unfilt. Pale	8 - 8½	8 - 8½	8 - 8½
200 Vis. No. 3 Color Unfilt. Pale	12 -12½	12 -12½	12 -12½
300 Vis. No. 3 Color Unfilt. Pale	13 -13½	13 -13½	13½-14
500 Vis. No. 3½ Color Unfilt. Pale	14½-15	15 -15½	15½-16
750 Vis. No. 4 Color Unfilt. Pale	18½-19	19 -19½	19½-20½
200 Vis. No. 5½ Color Red Oil	10 -10½	10 -10½	10 -10½
300 Vis. No. 5½ Color Red Oil	11½-12	11½-12	12 -12½
500 Vis. No. 6 Color Red Oil	12½-13	13 -13½	13½-14
750 Vis. No. 6 Color Red Oil	16½-17½	17 -18	17½-18½

CALIFORNIA (Viscosity at 100° F.)			
100 Vis. No. 2 color	11 -11½	11 -11½	11 -11½
100 Vis. No. 3 color	8½- 9	8½- 9	8½- 9
200 Vis. No. 3 color	13½-14	13½-14	13½-14
300 Vis. No. 3 color	15 -15½	15 -15½	15 -15½
450 Vis. No. 3½ color	18 -18½	18 -18½	18 -18½
550 Vis. No. 3 color	20 -21	20 -21	20 -21
600 Vis. No. 3½ color	21 -22	21 -22	21 -22
100 Vis. No. 5 color	7 - 7½	7 - 7½	7 - 7½
200 Vis. No. 5 color	12 -12½	12 -12½	12 -12½
300 Vis. No. 5 color	13 -13½	13 -13½	13 -13½
400 Vis. No. 5 color	15 -16	15 -16	15 -16
500 Vis. No. 5 color	16 -17	16 -17	16 -17
600 Vis. No. 6 color	17 -18	17 -18	17 -18
700 Vis. No. 7 color	18 -19	18 -19	18 -19

CYLINDER STOCKS

OKLAHOMA			
190-200 Vis. at 210° Bright Stock	31 -35	31 -35	31 -35
150-160 Vis. at 210° Bright Stock	27 -31	27 -31	27 -31
600 E Stock, 140-150 Vis. — 210°	-18	-18	-18
600 Steam Refined Olive Green	8 -11	8 -11	8 -11
600 Steam Refined Dark Green	6 - 8	6 - 8	6 - 8
Black Oil	5 - 6	5 - 6	5 - 6

PENNSYLVANIA (1-inch Immersion Test)			
600 Steam Refined	14 -14½	14½-15	14½-15¼
650 Steam Refined	20 -20½	20 -21	19½-20½
600 Flash	23½-24	24 -24½	24 -25
625 Flash	-33	33 -34	33 -34
600 Warren E	20½-21	20½-21	20½-21
600 Oil City E	19½-20	19½-20	19½-20
Cold Test Stocks (bright filtered)	-41	-41	-41
Cold Test Stock (dark filtered)	38½-39	38½-39	38½-39

(Note—Prices of total immersion test goods average 1 to 3 cents per gallon higher.)

Above prices are f. o. b. refinery in tank car. They are the prices at which the bulk of the products on the open market move. Whoever has knowledge of any open market prices on any considerable quantity of goods differing from the foregoing, will favor us with this information.

*Only one refiner quoting.

Penreco Petrolatum

Meets U. S. P. Specifications and Tests

THE various grades of Penreco Petrolatum are made from 100% pure Pennsylvania crude. It is odorless and tasteless and faithfully meets the U. S. P. specifications and tests. It will not become rancid or change color like petrolatum made from western crudes.

On order we will make Penreco Petrolatum to meet customers' special specifications as to melting point, texture and color. Either the long or short fibrous product can be obtained.

We will ship from stock in half barrels, barrels and less than carload lots or on a carload order of any one grade, we will manufacture according to special specifications. Two of the country's greatest consumers use Penreco Petrolatum exclusively for bases in their products.

We manufacture the following grades:

U. S. P. Snow White Petrolatum	112/114	Melting	Point
U. S. P. Lily White Petrolatum	"	"	"
U. S. P. Cream White Petrolatum	"	"	"
U. S. P. Extra Light Amber	"	"	"
U. S. P. Amber Petrolatum	"	"	"
U. S. P. Red Petrolatum	"	"	"
Technical Red Petrolatum	"	"	"
Dark Green Petrolatum	"	"	"
Dark Green Petrolatum	120/125	"	"

Write today for prices and samples.

The Pennsylvania Refining Company
Karns City, Pennsylvania

PENRECO
Pennsylvania Crude Products

Refinery Markets on Wax and Heavy Oil Products

Pennsylvania, Oklahoma, North and South Texas, Louisiana, Arkansas, California

WAX

PENNSYLVANIA	Prices July 6	Prices June 28	Prices June 21
	(Per Pound, New York)		
122-124 White Crude Scale..	5¼- 5⅜	- 5⅜	- 5⅜
124-126 White Crude Scale..	5⅜- 5½	- 5½	- 5½
OKLAHOMA			
	(Per Pound, Group 3)		
124-126 White Crude Scale..	4⅞- 5⅛	4⅞- 5	4¾- 5
CALIFORNIA			
White Crude Scale.....	5½- 6	5½- 6	5½- 6

FUEL OIL

PENNSYLVANIA			
36-40 Fuel Oil.....	6¼- 6¾	- 6½	6¼- 6¾
30-34 Fuel Oil.....	5⅞- 6⅛	5⅞- 6⅛	6 - 6¼
28-30 Fuel Oil.....	5¾- 6	5¾- 6	- 6
OKLAHOMA			
38-40 Straw distillate.....	4½- 4⅝	4½- 4⅝	4½- 4⅝
36-38 Straw distillate.....	4⅜- 4½	4¼- 4⅜	4¼- 4⅜
32-36 Gas oil (Gal.).....	- 4	- 4	- 4
26-30 Fuel oil (Bbl.).....	1.22½-1.27½	1.25 -1.27½	1.25 -1.30
24-26 Fuel oil (Bbl.).....	1.20 -1.22½	1.20 -1.25	1.20 -1.25
22-26 Fuel oil (Bbl.).....	1.17½-1.22½	1.17½-1.22½	1.20 -1.22½
18-22 Fuel oil (Bbl.).....	1.17½-1.20	1.17½-1.20	1.20 -1.22½
14-18 Fuel oil (Bbl.).....	1.15 -1.17½	1.15 -1.17½	1.17½-1.20
KANSAS*			
38-40 Light straw distillate..	4⅞- 5⅛	4⅞- 5⅛	5 - 5¼
36-38 Light straw distillate..	4½- 4⅝	4½- 4⅝	4½- 4⅝
32-36 Gas Oil.....	4¼- 4½	4¼- 4½	- 4½
18-22 Fuel Oil.....	1.25 -1.35	1.25 -1.35	1.30 -1.40
24-26 Fuel Oil.....	1.35 -1.45	1.40 -1.50	1.40 -1.50
*F. O. B. refinery, Kansas destination.			
NORTH TEXAS			
38-40 Straw Distillate.....	4 - 4¼	4 - 4¼	4 - 4¼
32-36 Gas Oil (Gal.).....	3⅞- 4	3⅞- 4⅛	3⅞- 4⅛
24-26 Fuel per (Bbl.).....	1.22½-1.27½	1.25 -1.30	1.25 -1.30

GULF COASTAL	Prices July 6	Prices June 28	Prices June 21
Fuel.....	1.75 -1.85	1.75 -1.85	1.75 -1.85
Gas Oil.....	5½- 5¾	5½- 5¾	5½- 5¾
NORTH LOUISIANA			
32-36 Light Gas Oil (Gal.)..	4¼- 4½	4¼- 4½	4⅜- 4½
16-20 Fuel Oil (Bbl.).....	1.30 -1.40	1.40 -1.50	1.40 -1.50
ARKANSAS			
32-36 Gas Oil.....	4¼- 4½	4¼- 4½	4¼- 4½
Smackover Crude Fuel.....	1.20 -1.25	1.20 -1.30	1.20 -1.30
Road oil.....	1.30 -1.36½	1.30 -1.36½	1.30 -1.36½
CALIFORNIA*			
14-18 Fuel Oil (Bbl.).....	1.00	1.00	1.00
14-18 Bunker Oil (Bbl.)....	1.00	1.00	1.00
24-30 Gas Oil (Bbl.).....	1.15	1.15	1.15
27 + Diesel Oil (Bbl.).....	1.15	1.15	1.15
*(San Joaquin Valley, San Francisco 4c per bbl. more.)			
NEW ENGLAND			
	(F. O. B. Boston and Fall River)		
30-32 Gas Oil (Gal.).....	5¾- 6	- 5⅞	- 5⅞
Fuel Oil (Bunker C) Bbl...	-1.81	-1.81	-1.82

PETROLATUMS

PENNSYLVANIA			
Snow White.....	-11	-11	-11
Lily White.....	- 9½	- 9½	- 9½
Cream White.....	- 6¾	- 6¾	- 6¾
Light Amber.....	- 3⅞	- 3⅞	- 3⅞
Amber.....	- 3⅝	- 3⅝	- 3⅝
Red.....	3⅛- 3¾	3⅛- 3¾	3⅛- 3¾
Green #5.....	1½- 1¾	1½- 1¾	1¾- 2

Above prices are f. o. b. refinery in tank car. They are the prices at which the bulk of the products on the open market move. Whoever has knowledge of any open market prices on any considerable quantity of goods differing from the foregoing, will favor us with this information.

(Continued from page 113)

tors. This situation naturally would cause a tank wagon price cut, which regardless of how cheap gasoline might be at refineries, would force that price to slip off some. And as many point out, a fall in refinery prices would tend to pull crude prices down regardless of the comparative firmness of that market if considered by itself.

In the face of these facts it is probable that virtually all refiners will make a united play for higher prices next week and with many of them in comparatively good shape as a result of this week's buying, they may be able to go through the first half of the month at least with better prices on gasolines.

Low Gravities In Demand

THE few refiners who have been making 56-58, 450 e.p. gasoline report that orders have been unusually good in the last few days. At least one refinery's output has been oversold and that company was quoting 11 cents Saturday.

Except for the decline to 10¾ cents the first of the week, U. S. Motor was steady until today when it again firmed somewhat.

Higher Gravities Dead

THE active buying has indicated that jobbers filled their storage late in May and have carefully remained out of the market for other than their immediate requirements until refiners were forced under 11 cents for lack of business.

Higher gravity gasolines have been stagnant. Prices have been almost nominal, refiners for the most part, however, trying to get at least the standard Oil Co. of New Jersey posted price for 64-66, 375 e.p. gasoline, in some instances where immediate instructions were furnished this price was shaded.

Natural gasoline orders also increased Friday and Saturday. Manufacturers are divided, however, over their opinions of the outlook for over July. Several believe better prices will be experienced if straightrun gasolines go to higher levels, while others think there are enough bearish factors to keep the spot market from gaining much strength.

The salesmanager of one of the larger companies has pointed out as a bearish factor the situation in which one manufacturer is placed. This salesmanager does not know what goods have been manufactured until they are in tankcars, he said, and since the goods have to move as quickly as possible, a broker has been retained to sell them. The broker is given 48 hours in which to move the gasoline. Since he gets his commission regardless of the price he obtains for the goods and also since it is up to him to get the stuff rolling within two days he naturally will offer gasoline under the market especially when buying is slow.

Fuel Oils Weak

KEROSENES are almost dead. Some 41-43 gravity oil has been offered as low as 5 cents a gallon, but most refiners have been holding for and moving some stuff at higher prices. With distillates firm at 4½ to 4⅝ cents, the general opinion is that kerosene will not go under 5 cents except for a few cars.

Gas oil is firm at 4 cents in Oklahoma; 3⅞ to 4 cents in Texas, and 4 to 4½ cents in Arkansas and Louisiana where the rice season has been helping that market. In Kansas the market has been steady at 4⅜ to 4½ cents.

Fuel oils are weak with movement slow. Little buying for over July has been revealed. Many refiners are storing their fuel for the winter demand which is expected to start in 60 to 90 days.

Neutral and cylinder stocks have been steady. Wax is firmer, the average price being close to 5 cents a pound.

Cities Service Buys Stations

WICHITA, KAN., July 3.—The Cities Service Oil Co. has purchased properties here of the City Service Gasoline Co., which include six service stations and one bulk distributing plant. There has been no connection between the two companies in the past although their names were similar.

Before the purchase, the Cities Service Co. had only two drive-in stations in Wichita. With the new system its eight stations will be well distributed over the city. W. F. Weber who has been president of the City Service Company, will leave the oil business. Myers Gross, Refiners Consolidated Sales Co., handled the deal for both parties.

Market Section

Pre-Holiday Buying Failed to Stiffen Chicago Gasoline Market

CHICAGO, July 3

TWO reductions of 1 cent each in the tank wagon price of kerosene by Standard Oil Co. of Indiana, followed immediately by Standard Oil Co. of Nebraska, were the outstanding events of the market this week from the viewpoint of the Chicago resale agency.

The first cut by the Standard of Indiana came July 1 and the second July 3. The refinery price of kerosene has declined roughly 1 cent a week since its peak of 10 cents a gallon. The spot price during the latter days of the week was around 5¼ cents and that quotation was maintained by refinery representatives even after the second tank wagon decline, but 41-43 gravity material was reported available in Oklahoma as low as 5 cents in small quantities and that quotation is said to have reached the jobbers a few times.

U. S. Motor gasoline was quoted by a number of refinery offices in Chicago at 11 cents to the trade July 3. Eleven cents was the going price and a few cars were moved at 11¼ cents. Refiners admit that some offers were made to the jobbing trade by a few marketers at a shade lower price. These offers, the refiners contend, are cases of speculators "selling short" and will never bring a profit to the speculating brokers. Gasoline of 56-58 gravity, 437 e.p., however, was available to the trade at 10¾ cents direct from the field.

There was much speculation in Chicago late in the week on the condition of jobber storage. It was significant that no large orders were reported in the Chicago market, and yet the buying was fairly brisk when number of orders was considered. Refiners believe the jobbers of this territory are running along with low stocks, holding just enough to assure them a supply over the week end and the holiday following. The recent small orders they think are expected to arrive on jobbers' side tracks about July 6.

Say Stocks Are Large

ALL authorities are not in accord on this point, however. After an investigation (which they acknowledge is not comprehensive) L. V. Nicholas, president of the National Petroleum Marketers' Association, and J. L. Murray, head of the association's marketing department, say that jobbers in Standard Oil Co. of Indiana territory now hold the largest July stocks in all history. In the association's confidential bulletin to members, dated July 3, Mr. Nicholas says—"Today, due to what we consider an inexcusable series of industrial blunders, the price to the public is fully 1½ cents per gallon more than the open spot market justifies and the gap is growing wider right along."

The more hopeful refiners state the balance of power in the gasoline market lies with the weather. Big consumption over the Fourth and a protracted warm dry period would save the market from further softening, they think. That situation may not develop. Saturday morning, when motors were tuned up and grips packed for three-day automobile trips by people all over the country, rain came upon the upper Great Lakes region in voluminous downpour. Although it did not cover the entire two states before the close of business Saturday noon, it lowered the spirits of the sellers and, undoubtedly, had something to do with slowing down purchases.

Moreover, the official weather outlook for the week is not encouraging. Temperatures normal or higher for July were predicted and showers also for all Standard Oil Co. of Indiana territory.

Light fuel products are much the same in supply and demand as for the last month. Refiners claim to have curtailed kerosene runs to a great extent, due to its decline, but no increase in stocks of distillate and gas oil have been heard of. Distillate of 38-40 gravity is available in the spot market at 4½ to 4¾ cents and 32-36 gas oil for 4 to 4½ cents. Neither is available on contract however. Refiners say they will approach winter with unusually small stocks of these materials and even jobbers are arranging with their domestic consumers to pay for their fuel at a stipulated margin above the wholesale spot price on day of shipment.

The fuel oil market is quiet. The whole refinery fuel price structure has declined about 2½ cents over the past week, but prices now are 20 to 25 cents higher than they were this time last year. year.

PLATT'S
OILGRAM
Petroleum Markets-Every Day

A SALES-MANAGER'S COSTLY ERROR!

THE sales-manager of a refinery in Oklahoma—who is a regular subscriber to the OILGRAM — neglected to tell us that he wanted immediate wires on crude and tankwagon price-changes.

One bright morning crude advanced unexpectedly and before his office learned of the advance, they had sold 20 cars of gasoline at least one-eighth cent under the market.

The sales-manager frankly admitted he had only himself to blame for not notifying the OILGRAM that he wanted wire service on crude and tankwagon changes, in addition to the daily market bulleti n from Tulsa. Nevertheless, this negligence cost his company a tidy little sum.

PLATT'S OILGRAM service by wire and daily bulletin is your greatest aid to showing a PROFIT for 1926.

Three months service for $25, or a whole year for $75. Send for your service to the nearest mailing point.

TULSA—608 Bank of Commerce Bldg.
CHICAGO—360 N. Michigan Ave.
CLEVELAND—852 Caxton Bldg.

Week's Price Changes Tank Wagon Markets

Gasoline Changes

Standard of Louisana—T.w. and s.s. prices gasoline advanced ½ cent, Tennessee, **May 18.** Prices at Tennessee points have been incorrectly published in the tank wagon table since May 18, but have been corrected in this week's issue.

* * *

Standard of Kentucky—Kerosene cut 1 cent, Kentucky, Georgia, Mississippi and Alabama, **June 29**, and 1 cent in Florida, **July 1.**

Standard of Indiana—Kerosene cut 1 cent through territory, **July 1**, and 1 cent, **July 3.**

Standard of Nebraska—Kerosene cut 1 cent through Nebraska, **July 1**, and 1 cent, **July 3.**

Magnolia Petroleum—Kerosene cut 1 cent, Texas and Arkansas, **July 3.**

Continental Oil—Kerosene cut 1 cent generally, Colorado, Wyoming and New Mexico, and 1 cent generally in Montana, **July 5.** Several Montana points were cut ½ cent, while some points were unchanged. Butte and Helena were each reduced ½ cent.

Correction

CHICAGO, July 6.—Prices on oleum spirits, V. M. & P. naphtha and cleaners' naphtha in the Standard Oil Co. of Indiana have been incorrect in the tank wagon table of National Petroleum News since May 22. On May 22 prices were advanced 1 cent generally through the territory. Prices have been corrected in this week's issue to include this advance.

Foreign Opportunities

Reserved information may be obtained from the Bureau of Foreign and Domestic Commerce, Washington, and its district and cooperative offices by duly registered firms and individuals upon written request by opportunity number. The Bureau does not furnish credit ratings or assume responsibility as to the standing of foreign inquirers; the usual precautions should be taken in all cases, and where no references are offered it does not necessarily imply that satisfactory references could not be given. Correspondence may be in English unless otherwise stated.

20879.—Kerosene, Tegal, Java, purchase.

20882.—Paraffin wax, Hamburg, Germany, purchase.

20905.—Petroleum greases, Montevideo, Uruguay, purchase.

Tank Wagon, Service Station Markets for Gasoline and Kerosene In United States Territories and Canada

These Prices in Effect July 5, 1926

S.O. NEW JERSEY TERRITORY

	Gasoline				Oil
	T.W.	Tax	Total T.W.	S.S.	T.W.
Atlantic City, N. J.	19	0	19	*	16
Newark, N. J.	19	0	19	21	16
Annapolis, Md.	19	2	21	*	16
Baltimore, Md.	19	2	21	24	16
Cumberland, Md.	19	2	21	24	16
Washington, D. C.	19	2	21	24	16
Danville, Va.	19	4½	23.5	*	16
Norfolk, Va.	19	4½	23.5	26.5	16
Richmond, Va.	19	4½	23.5	26.5	16
Roanoke, Va.	19	4½	23.5	26.5	16
Petersburg, Va.	19	4½	23.5	*	16
Williamsburg, Va.	19	4½	23.5	*	16
Charleston, W. Va.	19	3½	22.5	25.5	16
Clarksburg, W. Va.	19	3½	22.5	25.5	16
Keyser, W. Va.	19	3½	22.5	*	16
Parkersburg, W. Va.	19	3½	22.5	25.5	16
Wheeling, W. Va.	19	3½	22.5	25.5	16
Charlotte, N. C.	19.5	4	23.5	26.5	16
Hickory, N. C.	19.5	4	23.5	*	16
High Point, N. C.	19.5	4	23.5	*	16
Mt. Airy, N. C.	19.5	4	23.5	*	16
Salisbury, N. C.	19.5	4	23.5	*	16
Charleston, S. C.	19.5	5	24.5	27.5	16
Columbia, S. C.	19.5	5	24.5	27.5	16

*Dealers set own prices. S. O. New Jersey does not operate station.

S. O. NEW YORK

*New York City	21	0	21	25	17
Albany, N. Y.	21	0	21	23	17
Buffalo, N. Y.	20	0	20	23	17
Rochester, N. Y.	21	0	21	25	15
Syracuse, N. Y.	21	0	21	23	17
Boston, Mass.	21	0	21	24	17
Augusta, Me.	21	3	24	27	17
Manchester, N. H.	21	2	23	27	17
Burlington, Vt.	21	2	23	25	17

*In steel barrels.

ATLANTIC REFINING

Pittsburgh, Pa.	20	0	20	*25	17
Philadelphia, Pa.	20	0	20	*25	17
Allentown, Pa.	20	0	20	*25	17
Erie, Pa.	18	0	18	*23	15
Scranton, Pa.	20	0	20	*25	17
Altoona, Pa.	20	0	20	*25	17
Dover, Del.	20	2	22	25	17
Wilmington, Del.	20	2	22	25	17
Providence, R. I.	21	1	22	24	17
Boston, Mass.	21	0	21	24	17
Springfield, Mass.	21	0	21	23	17
Worcester, Mass.	21	0	21	24	17
Hartford, Conn.	21	2	23	26	16
New Haven, Conn.	21	2	23	26	17

*Contains 2-cent tax collected by retail dealer and paid by him directly to state.

S. O. KENTUCKY

Lexington, Ky.	20	5	25	28	18
Louisville, Ky.	20	5	25	28	17
Covington, Ky.	19	5	24	27	18
Clarksdale, Miss.	19	4	23	26	16.5
Jackson, Miss.	19	4	23	26	15.5
Natchez, Miss.	18.5	4	22.5	25.5	16
Vicksburg, Miss.	18.5	4	22.5	25.5	16
Birmingham, Ala.	20	2	22	25	18.5
Mobile, Ala.	19	2	21	24	17
Montgomery, Ala*	21	2	23	26	19.5
Atlanta, Ga.	†21	3½	25	28	19
Augusta, Ga.	†21	3½	25	28	19
Macon, Ga.	†21	3½	25	28	19
Savannah, Ga.	†19	3½	23	25	17
Jacksonville, Fla.	19	4	23	26	17
Miami, Fla.	21	4	25	28	18.5
Tampa, Fla.	19	4	23	26	17
Pensacola, Fla.	19	4	23	26	17.5

*Local privilege tax of 1 cent on gasoline and ½ cent on kerosene at Montgomery included.

†Georgia has ½ cent per gal. inspection fee on gasoline which is deducted as well as the state gasoline road tax of 3½ cents, to get the actual net tank wagon market to dealer.

S. O. INDIANA

	Gasoline				Oil
	T.W.	Tax	Total T.W.	S.S.	T.W.
Chicago, Ill.	†19	0	†19	21	13.5
Decatur, Ill.	19.2	0	19.2	21.2	14
E. St. Louis, Ill.	18.1	0	18.1	20.35	13.1
Joliet, Ill.	19.4	0	19.4	21.4	14.2
Peoria, Ill.	19.2	0	19.2	21.2	14
Quincy, Ill.	19.2	0	19.2	21.2	13.8
Indianapolis, Ind.	19.2	3	22.2	24.2	14.2
Evansville, Ind.	19	3	22	24	14
South Bend, Ind.	19.4	3	22.4	24.4	14.4
Detroit, Mich.	19.8	2	21.8	23.8	14.7
Grand Rapids, Mich.	19.7	2	21.7	23.7	14.6
Saginaw, Mich.	19.9	2	21.9	23.9	14.8
Madison, Wis.	19.3	2	21.3	23.3	14
Milwaukee, Wis.	19.1	2	21.1	23.1	13.8
La Crosse, Wis.	20.2	2	22.2	24.2	14.9
Minneapolis, Minn.	20.2	2	22.2	24.2	15.1
Duluth, Minn.	20.5	2	22.5	24.5	15.1
Mankato, Minn.	20.1	2	22.1	24.1	14.9
Des Moines, Iowa	19.5	2	21.5	23.5	14.4
Davenport, Iowa	19.5	2	21.5	23.5	14.4
Sioux City, Iowa	19	2	21	23	14
Mason City, Ia.	19.5	2	21.5	23.5	14.4
St. Louis, Mo.	*18.6	2	20.6	22.9	13.5
Kansas City, Mo.	††19.9	2	21.9	23.9	12.8
St. Joseph, Mo.	*19	2	21	23	13.4
Fargo, N. D.	21.9	1	22.9	24.9	17.1
Grand Forks, N. D.	22.2	1	23.2	25.2	17.4
Minot, N. D.	21.9	1	22.9	24.9	17.1
Pierre, S. D.	20.5	3	23.5	25.5	15.6
Huron, S. D.	20.5	3	23.5	25.5	15.6
Wichita, Kans.	**17.8	2	19.8	21.8	13.3
Bartlesville, Okla.	17.8	3	20.8	22.8	13.3

†Dumps of 100 or more gallons at 18c per gallon.

*Includes city tax of ½c.

††Includes city tax of 1c.

**Dumps of 50 gallons or more in Kansas, 1c discount per gallon.

S. O. NEBRASKA

Crawford, Neb.	20	2	22	*·	14.75
Omaha, Neb.	19.25	2	21.25	23.25	14
McCook	20.75	2	22.75	24.75	15.5
Norfolk	19.75	2	21.75	23.75	14.5
North Platte	20.75	2	22.75	24.75	15.25
Scottsbluff	20.25	2	22.25	24.25	14.75

*Standard has no service station here.

CONTINENTAL OIL

Denver, Colo.	20	2	22	22	18
Pueblo, Colo.	20	2	22	24	18
Casper, Wyo.	20	2½	22.5	24.5	16.5
Cheyenne, Wyo.	21	2½	23.5	25.5	18
Butte, Mont.	22	2	24	24	20.5
Helena, Mont.	24	2	26	28	20.5
Salt Lake City, Utah.	22.5	3½	26	28	19
Boise, Ida.	24	3	27	29	21
Albuquerque, N. M.	26.5	3	29.5	29.5	20

S. O. CALIFORNIA

Phoenix, Ariz.	22	3	25	28	21.5
Los Angeles, Cal.	14.5	2	16.5	20.5	15.5
Fresno, Cal.	16.5	2	18.5	22.5	17.5
San Francisco, Cal.	16	2	18	22	15.5
Reno, Nev.	19.5	4	23.5	27.5	19
Portland, Ore.	16	3	19	23	16.5
Seattle, Wash.	16	2	18	22	16.5
Spokane, Wash.	20	2	22	26	20.5
Tacoma, Wash.	16	2	18	22	16.5

S. O. LOUISIANA

Little Rock, Ark.	18	4	22	25	16
Alexandria, La.	18	2	20	23	16
Baton Rouge, La.	17	2	19	22	14.5
Lake Charles, La.	18.5	2	20.5	23.5	16
New Orleans, La.	*18.5	2	20.5	23.5	15
Shreveport, La.	17	2	19	22	15
Lafayette, La.	18	2	20	23	15.5
Bristol, Tenn.	21	3	24	27	17.5
Chattanooga, Tenn.	20.5	3	23.5	26.5	17.5
Knoxville, Tenn.	20.5	3	23.5	26.5	18
Nashville, Tenn.	19.5	3	22.5	25.5	18
Memphis, Tenn.	18.5	3	21.5	24.5	17

*Includes 1c city tax on gasoline and kerosene.

S. O. OHIO

	Gasoline				Oil
	T.W.	Tax	Total T.W.	S.S.	T.W.
All Ohio points	20	2	22	24	17

MAGNOLIA PETROLEUM

Muskogee, Okla.	16	3	19	22	12
Oklahoma City	14	3	17	20	12
Tulsa, Okla.	16	3	19	22	12
Fort Smith, Ark.	17	4	21	24	15.5
Little Rock, Ark.	17	4	21	24	15.5
Texarkana, Ark*	19	4	23	23	14
Dallas, Tex.	20	1	**21	21	14
El Paso, Tex.	21	1	**22	22	15
Fort Worth, Tex.	20	1	**21	21	14
Houston, Tex.	20	1	**21	21	14
San Antonio, Tex.	20	1	**21	21	14

*Within city of Texarkana, Ark., the state tax on gasoline is 1c per gal. conforming with the Texas state tax. In Texarkana district outside of the city the 4c state tax applies.

**Magnolia is maintaining only one price schedule in Texas—its retail schedule. This is in keeping with its new contract, effective May 5, which allows the dealer 3c off the retail price.

V. M. & P. NAPHTHA

(Changes ordinarily occur coincident with gasoline)

	Oleum Spirits	V.M.&P. Naphtha	Cleaners Naphtha
Chicago	21	23	23
Detroit	22.2	24.7	24.7
Kansas City	21.2	23.2	23.2
Milwaukee	21.2	*25.7	*25.7
Minneapolis	22.5	*27	*27
St. Louis	20.4	21.9	23.2
New York	...	22	....

*Including state tax.

CANADA

(Per Imperial Gallon, which is 1.2 American Gallons)

ONTARIO

	Gasoline				Oil
	T.W.	Tax	Total T.W.	S.S.	T.W.
Toronto	26.5	3	29.5	33	24
Ottawa	26.5	3	29.5	33	24
Cochrane	31.5	3	34.5	40	29
Ft. William	29.5	3	32.5	37	25.5

MANITOBA

Winnipeg	29.5	3	32.5	36	26

SASKATCHEWAN

Regina	32.5	0	32.5	37	29

ALBERTA

Edmonton	31.5	2	33.5	37	28.5
Calgary	29.5	2	31.5	35	26.5

BRITISH COLUMBIA

Vancouver	23	3	26	30	23

QUEBEC

Montreal	26.5	3	29.5	33	24
Quebec City	28.5	3	31.5	35	26
Three Rivers	28.5	3	31.5	35	26

NEW BRUNSWICK

St. John	29.5	3	32.5	36	27
Moncton	29.5	3	32.5	36	27.5

NOVA SCOTIA

Halifax	29.5	3	32.5	36	27
Sydney	31.5	3	34.5	37	27.5

PRINCE EDWARD ISLAND

Charlottetown	29.5	3	32.5	36	27

Note: In districts surrounding these points 1c additional is added to city price.

Declining Gasoline and Kerosene Prices Slow up Sales for Export

By Special Correspondent
NEW YORK, July 6

WEAKNESS in gasoline last week tended to discourage export buying and only one bulk cargo sale was reported. European advices state that weather conditions over there are much improved, and consumption of gasoline is soaring. Weather along the Atlantic seaboard has also been much better and consumption of gasoline is gaining but stocks are large and prices are still weak.

Gas oil was one of the few bright spots. This product is firm. Waxes were easier. Lubricants were steady. Kerosene showed a weaker tendency. Bunker oil demand was slightly better.

Export Gasoline—New York

Weakening tendency in gasoline coupled with the holiday feeling that dominated the market towards the close of the week, resulted in a dearth of buying orders. There was an inquiry from the United Kingdom for 50,000 barrels of U. S. Motor, 64-66 375 end point gasoline and water white kerosene for August shipment but this failed to materialize.

Most of the large refiners were asking from 13½ to 14 cents a gallon for U. S. Motor in bulk at the refineries but there were persistent rumors of offerings at 13 cents a gallon. Refiners appear less confident of the outlook and are more inclined to press sales. Cased gasoline was dull throughout the week. One of the leading refiners sold 35,000 cases of motor and 64-66 gravity 375 end point for August shipment to Japan.

Export Gasoline—Gulf Ports

Prices showed an easier tendency. Export demand lagged. The only bulk sale reported included 55,000 barrels of U. S. Motor at 12 cents; 64-66 gravity 375 end point at 14 cents; prime white at 8¼ cents and water white at 9½ cents a gallon which was sold by a leading Independent refiner to a French company reported to be one of its subsidiaries. There was an inquiry from the United Kingdom for 45,000 barrels of U. S. Motor and 64-66 gravity 375 end point gasoline for July-August shipment but this failed to materialize.

Cased gasoline ruled dull. For U. S. Motor in cargo lots the price was $2.25 a case while 64-66 gravity 375 end point was quoted at $2.50 a case. Business was mainly against contracts.

Domestic Gasoline—New York

Consumption of gasoline took a spurt last week, but demand was not active enough to check the downward tendency. It was persistently reported that California gasoline could have been bought at around 13 cents, delivered, Atlantic seaboard terminals. At New York the price was 13½ cents a gallon in bulk at the refineries and 14½ cents a gallon, in tank cars delivered to the trade. Jobbing demand for gasoline is a little more spirited.

Domestic Gasoline—Gulf Ports

Jobbing interests were buying in a light way and no sizeable sales were heard of. Consumption is gaining but stocks are large due to the slump in export buying. Refiners were asking 12¼ cents a gallon, in tank cars. No tank wagon price changes were reported during the week. There appears to be more disposition to shade prices.

Export Kerosene—New York

Export demand for kerosene lagged the greater part of last week. Prices, however, did not show much change. Leading refiners were asking 11 cents for water white and 10½ cents a gallon for prime, but it was reported that business could have been done at 10½ and 10 cents a gallon respectively on a firm bid. Foreign buyers have been showing more interest in fall deliveries but are apparently uninterested at prevailing prices. Cased kerosene was quiet but fairly steady.

Export Kerosene—Gulf Ports

Cased kerosene continued the downward trend and on Saturday was available at $1.80 a case for prime and $1.90 for water in cargo lots. No bulk movements were disclosed. A big Independent is working on an inquiry for 40,000 cases of prime and water white for August shipment to China.

Bulk kerosene was dull. Water white was held at 9½ cents and prime at 8¼ cents. Stocks are low and few refiners care to take on business at these prices, regardless of the easier tendency in the Mid-Continent.

Domestic Kerosene

Domestic demand for kerosene has been steadily declining, although the movement is still unusually large for this time of the year. Water white at Atlantic seaboard terminals was held at 11 cents a gallon, and 12 cents a gallon in tank cars delivered to the trade, but it was reported these prices could have been shaded ½ cent on a firm bid. Tank wagon prices have not shown any change.

Lubricants—New York

Pennsylvania cylinder stocks are in better demand. French buyers are purchasing in a larger way, but orders are still mainly confined to less than five hundred barrels. Neutral oils are marking time. Black oil was moving a little more freely. There was not much buying interest shown in the paraffin oils. Domestic demand was more active.

Lubricants—Gulf Ports

Gulf refiners reported a more spirited export demand, and a big Independent is reported to have booked a cargo of 30,000 barrels of assorted lubricants for August shipment to the United Kingdom. There is a more active inquiry for zero cold test oils for fall shipment to France and northern Europe.

Waxes—New York

The wax market continued very dull. Advices received from the other side indicate that there is a price war on in Europe, with the big refiners going direct to the consumers thus eliminataing the jobbers. Consequently the smaller factors in the local trade are doing little or nothing in the way of exporting.

Prices were a shade easier. For 124-126 A.m.p. the majority of sellers were asking 5¼ cents a pound while 124-126 A.m.p. was held at 5.30 cents a pound. Refined waxes were easier. Fully refined 120-122 A.m.p. is held at 5.90 cents a pound; 123-125 A.m.p. 6 cents; 125-127 at 6⅛ cents; 128-130 at 6¼ cents; 130-132 A.m.p. at 6⅜ cents.

Waxes—Gulf Ports

Demand for white crude scale wax was less active. There was very little foreign buying interest shown during the week. Most of the large European consumers are apparently awaiting developments. Prices showed an easier tendency. For 124-126 A.m.p. the price was 5.15 cents a pound while semi-refined 124-126 A.m.p. was quoted at 5.30 cents. Fully refined waxes were equally dull. The asking price for 125-127 A.m.p. was 5¾ cents while 128-130 was quoted at 5⅞ cents and 130-132 A.m.p. at 6 cents. For 133-135 A.m.p. sellers were asking 6⅜ cents while 135-137 A.m.p. was quoted at 6⅝ cents a pound.

Bunker Oil—New York

The demand for bunker oil was slightly more spirited last week and prices are holding up fairly well. Leading refiners are quoting grade C at $1.75 a barrel f.o.b. New York harbor refinery while the f.a.s. price is $1.81½ a barrel. Diesel oil showed little change. Business was routine and mainly against contracts. The price was steady at $2.50 a barrel f.o.b. New York harbor refinery.

Bunker Oil—Gulf Ports

There was a persistent rumor current during the week that one of the leading Independent refiners had sold a cargo of grade C bunker oil at $1.40 a barrel. Details and confirmation were lacking. At New Orleans the price was generally quoted at $1.60 a barrel for bunkering purposes while cargoes were available at $1.55 and possibly $1.50 a barrel. At Tampico grade C bunker oil was quoted at $1.50 a barrel for bunkering, including taxes while in cargo lots the price was $1.40 a barrel, including taxes. Heavy Panuco crude oil was nominally quoted at $1.20 a barrel f.o.b. Tampico, taxes to be added.

Gas Oil—New York

Demand for gas oil lagged last week. The slump in gasoline has brought about more liberal gas oil offerings. However, 36-40 was steady at 6¾ cents a gallon, bulk, refineries while 28-34 was still held at 6 cents a gallon. The consumption of this oil is still large but export buyers are showing very little interest at present. Stocks are moderate.

Gas Oil—Gulf Ports

There was an inquiry in the market for 35,000 barrels of 26-28 transparent gas oil for July-August shipment to the Continent, presumably Sweden. One of the large Independents was working on this inquiry. The asking price for this grade ranged from 5¼ to 5½ cents although in less than cargo lots, business has transpired at 5½ cents. For 32 plus dark gas oil refiners were quoting from 5 to 5¼ cents, the latter figure being more generally quoted.

Petrolatums

There was a more active demand for petrolatums last week. Snow white is moving in a larger way. Manufacturers of sunburn lotions and creams are credited with most of the buying. Export demand was routine and light.

Prairie Shipments Off 6,000 Barrels Daily

TULSA, July 3.—Shipments of the Prairie Pipe Line Co. declined sharply in June as compared with May, dropping in daily average from 146,525 barrels to 140,514 barrels. Total for May was 4,542,260 barrels, or 326,844 barrels greater than that for June, which was 4,215,416 barrels. Daily average during June was the lowest recorded since last January, and was nearly 8000 barrels less than it was during March, when these shipments reached their highest point of the current year.

Comparative figures showing shipments of the Prairie Pipe Line Co. for the past six months:—

Month	Shipments	Daily Average
January	4,187,390	135,077
February	4,071,405	145,407
March	4,588,038	148,001
April	4,332,972	144,432
May	4,542,260	146,525
June	4,215,416	140,514

Complete Export Markets

New York Export Market

GASOLINE	July 6	June 28
U. S. Motor Tank cars Ref.	13½	–13½
U. S. Motor cases	29.40	–29.40
California grade U. S. Motor F. O. B. N. Y. Bulk	13 –13¼	13 –13¼
KEROSENE		
43-45-150 W.W.Tank cars Ref.	10¾	–11
43-45-150 W.W.Cases	20.40	–20.40
42-44-110 S.W.Cases	19.15	–19.15
GAS OIL		
36-40, Bulk Refinery	–06¾	–06¾
28-34, Bulk Refinery	–06	–06
MEXICAN BUNKER OIL		
Grade C, f. o. b. ref. Bulk	1.75	– 1.75
Diesel Oil f. o. b. ref. Bulk	2.50	– 2.50

LUBRICATING OILS

The following prices are cooperage basis f. o. b. New York, products being manufactured by inland refineries.

CYLINDER OILS (Bbls.) 1 inch Imersion Test; All Penna. Products		
Filtered D 600	29	–29
Filtered E 600	28	–28
Unfiltered 600 s. r.	23½	–23½
Unfiltered 650 s. r.	28	–28
600 flash s. r.	29½	–29½
630 Flash	40	–40
RED PARAFFIN (Bbls.) (Viscosity at 70)		
300 vis. No. 5 color	21	–21
250 vis. No. 5 color	20	–20
High Viscosity. No. 5 color	25	–25
NEUTRAL OILS (Bbls.) (Viscosity at 70)		
200 vis.at F.Pale. No. 3 color	–31	–31
180 Pale. No. 3 color	–29	–29
150 Pale. No. 3 color	–24½	–24½
BLACK OIL (Bbls.)		
25-30 cold test	13½	–13½
15 cold test	14½	–14½

MEDICINAL OILS (Includes Price of Drums) (Penna. Stocks)

	July 6	June 28
Domestic 875-885 s. g.	– .85	– .85
Domestic 865-.870 s. g.	.75– .80	.75– .90
Russian 885-.890 s. g. 325-330 vis.	1.10–1.25	1.10–1.25

WAXES (Penna. Stocks) (F. A. S. Carload Lots)

WHITE CRUDE SCALE		
122-124 A. m. p.	–5¼	–5.40
124-126 A. m. p.	–5.30	–5.40
MATCH		
105-108 A. m. p.	–06	–06
FULLY REFINED		
120-122 A. m. p.	–05.90	05⅞–06
123-125 A. m. p. Philadelphia	–06	–06
125-127 A. m. p.	–06⅛	–06⅛
128-130 A. m. p.	–06¼	–06¼
130-132 A. m. p.	–06⅜	–06⅜
133-135 A. m. p.	–06⅝	–06¾
135-137 A. m. p.	–07	–07
SEMI REFINED		
122-124 A. m. p.	–5.30	–5.40
YELLOW CRUDE SCALE		
124-126 A. m. p.	–05	–5.15

PETROLATUMS (Penna. Stocks) Per Pound

Dark Green	02⅞–03	02⅞–03
Veterinary	03¼	03¼
Light Amber	03⅝	03⅝
Dark Amber	03½	03½
Cream	06¼	06¼
Lily White	08¼	08¼
Snow White	10¾–11	10¾–11

Gulf Export Market

GASOLINE
F. O. B. Seaboard
Shipments of 20,000 Bbls. and over

	July 6	June 28
U. S. Motor, Bulk	12	– 12
60-62 400 e. p. Bulk	13	–.13
61–63–390 e. p. Bulk	13¼	–13½
64-66 375 e. p. Bulk	14	.14¼–.14½
U. S. Motor, Cases (cargo lots	2.25	2.25
34-66, Cases (cargo lots)	2.50	2.50
KEROSENE		
Water White, 43-45 bulk	09½	–09½
Prime White, 41-43 bulk	08¼	–08¼
Water White, cases (cargo lots)	1.90	–1.95
Prime White, cases (cargo lots)	1.80	–1.85
DOMESTIC GAS AND BUNKER OIL		
26-28, gravity, bulk*	05¼–05½	05¼–05½
32 plus, bulk, Dark	05	–05
Grade C. Bunker oil	1.60	–1.60
Cargoes	1.50	–1.50

*Transparent through neck of a 4 oz. bottle.

MEXICAN CRUDE AND BUNKER OILS
F. O. B. Steamer Tampico

Heavy, Taxes to be added	1.20	–1.20
Grade C, Bunker oil Taxes paid	1.50	–1.50
Grade C, Bunker oil F. O. B. New Orleans	1.60	–1.60

SOUTH TEXAS
(Viscosity at 100° F; cold test 0)
(Tanker, F. O. B. Houston)

*LUBRICATING OILS	July 6	June 28
100 Vis. No.2 Unfiltered Pale	07¼	07¼
150 Vis. No.2½ Unfiltered Pale.	09¼	09¼
200 Vis. No.3 Unfiltered Pale	11	11
300 Vis. No.3 Unfiltered Pale	13	13
500 Vis. No.3½ Unfiltered Pale,	14¼	14¼
200 Vis. No.5½ Red Oil	10¼	10¼
300 Vis. No.5½ Red Oil	11	11
500 Vis. No.6 Red Oil	11½	11½
800 Vis. No.6 Red Oil	16	16

*These prices are entirely nominal owing to wide fluctuations.

Pacific Export Market

(Cargo lots quotations at seaboard, Los Angeles

	July 6	June 28
Gasoline, U. S. Motor— 54°-56°	11 –11¼	11 –11¼
Gasoline, U. S. Motor— blends and special cuts	11¼–11½	11¼–11½
Gas Oil, 24°—30°B. per bbl.	$1.15	$1.15
Diesel Oil, 27°B—plus per bbl.	$1.15	$1.15
Bunker Oil, 14°—18°B. per bbl.	$1.00	$1.00
Fuel Oil, 14°—18°B. per bbl.	$1.00	$1.00
Kerosene, W. W. 40°—42° B per gal., 125-150 flash test	05¾–06¾	.05¾–.06¾
Cased Goods		
Gasoline, U. S. Motor	$2.55	$2.55
Kerosene, W. W. 38°—40° B per case, flash test 125-150	$1.50–1.55	$1.50–1.55

N. Y. Domestic Market

The following light oil, gas and fuel oil prices are F. O. B. New York refineries, being products made from Domestic (including California) and Mexican Crudes.

	July 6	June 28
U. S. Motor Gasoline, Tank Cars Delivered greater N.Y.	14½	–14¾
U. S. Motor Gasoline, Tank Cars Bayonne	13½	–13½
U. S. Motor, Tank Cars, *Atlantic Seaboard Terminals	13 –13¼	–13¾
Kerosene, 44 150 W. W. 'Tank Cars de'd greater N.Y.	–11¾	–12
Grade C Bunker f.o.b.N.Y.Ref.	1.75	1.75
Diesel Oil f.o.b. Refinery	2.50	2.50
Gas Oil, 36-40, Bulk Refinery	–06¾	–06¾
Gas Oil, 28-34 Bulk, Refinery	–06	–06

*New York, Philadelphia, Portsmouth, Va. Charleston, S. C.

Crude Oil Prices All Fields

PRICES IN EFFECT, *July 5*

EASTERN FIELDS
Posted by Joseph Seep Purchasing Agency

Penna. Grade Oil in New York Transit Lines (Alleghany, N. Y. District)	$3.65
Bradford District Oil in National Transit Lines (Bradford District)	3.65
Penna. Grade Oil in National Transit Lines (Other Pennsylvania)	3.55
Penna. Grade Oil in Southwest Penna. Pipe Lines (Other Pennsylvania)	3.55
Penna. Grade Oil in Eureka Pipe Lines (West Virginia)	3.50
Penna. Grade Oil in Buckeye Pipe Lines (Macksburg, O. district)	3.30
Keister Grade in National Transit Lines (Butler Co.)	2.45
Gaines, Tioga Co. (Pa.)	3.10
Cabell Grade in Eureka Pipe Lines (West Virginia)	2.40
Corning Grade in Buckeye Pipe Lines (Ohio)	2.55
*Somerest Medium in Cumberland Pipe Lines (Kentucky)	2.50
*Somerset Light in Cumberland Pipe Lines (Kentucky)	2.65
Ragland Grade in Cumberland Pipe Lines (Kentucky)	1.25

*Somerset oil run prior to Oct. 1, 1923, takes price of 6 cents lower than above quotations.

CENTRAL STATES FIELDS
Posted by Ohio Oil Co.

Wooster	$2.55	Illinois	$2.37
Lima	2.48	Plymouth	1.90
Waterloo	1.35	*Canadian Petrolia	2.88
Indiana	2.25	*Posted by Imperial Oil, Ltd.	
Princeton	2.37		

OKLAHOMA, KANSAS And NORTH TEXAS FIELDS
(Prices of Prairie Oil & Gas Co.)
(Prairie's prices apply in Oklahoma, Kansas, North and East Central Texas)

28-28.9	$1.65	41-41.9	$2.69
29-29.9	1.73	42-42.9	2.77
30-30.9	1.81	43-43.9	2.85
31-31.9	1.89	44-44.9	2.93
32-32.9	1.97	45-45.9	3.01
33-33.9	2.05	46-46.9	3.09
34-34.9	2.13	47-47.9	3.17
35-35.9	2.21	48-48.9	3.25
36-36.9	2.29	49-49.9	3.33
37-37.9	2.37	50-50.9	3.41
38-38.9	2.45	51-51.9	3.49
39-39.9	2.53	52 and above	3.57
40-40.9	2.61		

Effective May 15, The Texas Co. posted same gravity and price schedule as Prairie in Oklahoma, Kansas, North, North Central and Central Texas fields.

Humble Oil & Refining Co. Prices

(Ranger, North Texas, Mexia, Powell, Richland, Wortham, Lytton Springs, Currie, Moran and Nocona crudes all in Texas.)

Humble's grades and prices same as Prairie schedule. In fields where Humble purchases crude below 28°, 8 cents less for each full degree.

Mirando, Tex	$1.25

Magnolia Petroleum Co. Prices In Oklahoma, Kansas and North and East Central Texas

Same grades and prices as posted by Prairie, excepting that Magnolia is paying $1.30 for all oil below 28 gravity.

Corsicana heavy	$1.25

PANHANDLE, TEXAS
Prices of Kay County Gas Co. and Magnolia Petroleum Co.

28-28.9	$1.35	34-34.9	$1.65
29-29.9	1.40	35-35.9	1.70
30-30.9	1.45	36-36.9	1.75
31-31.9	1.50	37-37.9	1.80
32-32.9	1.55	38-38.9	1.85
33-33.9	1.60	39 and above	1.90

Humble Oil & Refining Co.

Same grades and prices as Kay County Gas Co. and Magnolia Petroleum Co., excepting these five grades of light oil posted on June 21:

39-39.9	$1.90	42-42.9	$2.05
40-40.9	1.95	43-43.9	2.10
41-41.9	2.00	44 and above	2.15

NORTH LOUISIANA—ARKANSAS FIELDS
***Prices of the Standard Oil Co. of Louisiana**

Caddo, below 32	$2.10
" below 32-34.9	2.25
" 35-37.9	2.35
" 38 and above	2.45
Homer, below 31	1.85
" 31-32.9	2.00
" 33-34.9	2.10
" 35 and above	2.20
Haynesville, below 33	2.00
" 33 and above	2.10
El Dorado, including Lisbon, below 33	2.00
" 33-34.9	2.10
" 35-36.9	2.20
" 37 and above	2.30
Bull Bayou, 32-34.9	1.95
" 35-37.9	2.10
" 38 and above	2.25
Smackover, below 24	1.10
" 24-24.9	1.35
" 25-25.9	1.40
" 26-26.9	1.45
" 27 and above	1.50
De Soto	2.30
Crichton	2.10
Bellevue	1.50
Cotton Valley	1.20
**Urania, La	1.15

*Gulf Refining Co. of Louisiana and Louisiana Oil Refining Corp. are paying same prices as Standard in fields where they purchase. All purchasers of Smackover are maintaining the same gravity and price schedule as Standard.

Gulf is paying 95c for Calion (East El Dorado Crude.)

**Posted by Louisiana Oil Refining Corp.

The Texas Co.

Caddo, below 26	$1.40
" 26-28.9	1.55
" 29-31.9	1.70

The Texas Co.'s prices on other grades of Caddo crude and on other N. Louisiana and Arkansas crudes it purchases are same as Standard's.

STEPHENS, ARKANSAS
Posted by Louisiana Oil Refining Corp., and Atlantic Oil Producing Co.

26 and above	$1.65	Below 26	$1.45

GULF COASTAL FIELDS
Posted by Humble Oil & Refining Co.

Grades A	$1.60	29-29.9	$1.75
Grades B:		30-30.9	1.80
Below 25	1.50	31-31.9	1.85
25-25.9	1.55	32-32.9	1.90
26-26.9	1.60	33-33.9	1.95
27-27.9	1.65	34-34.9	2.00
28-28.9	1.70	35 and above	2.05

Humble is paying the above prices in Goose Creek, Hull, Liberty, West Columbia, Orange, Boling and Pierce Junction fields.

Prices of The Texas Co.

Grades A	$1.60	*Grades B	$1.60
†Grades B (light crude):			
35-35.9	$2.05	38-38.9	$2.20
36-36.9	2.10	39-39.9	2.25
37-37.9	2.15	40 and above	2.30

*Grades B include all heavy crudes which do not meet tests for Grades A or for Gulf Coast light crude.

†The Texas Co.'s gravity and price schedule on oil below 35° is same as Humble's postings on Grades B.

ROCKY MOUNTAIN FIELDS
Prices of Ohio Oil Co. and Midwest Refining Co.

†Salt Creek 29-29.9	$1.73
" " 30-30.9	1.81
" " 31-31.9	1.89
" " 32-32.9	1.97
" " 33-33.9	2.05
" " 34-34.9	2.13
" " 35-35.9	2.21
" " 36-36.9	2.29
" " 37 and above	2.37
Elk Basin	2.40
Grass Creek light	2.40
Big Muddy	2.25
Lance Creek	2.40
Rock Creek	2.25
†Osage	2.40
†Cat Creek, Mont	2.40
Sunburst, Mont	1.05
†Hogback, N. Mex	2.45
Artesia, N. Mex	2.20

†Posted by Midwest Refining Co. Midwest also buys Grass Creek light, and Elk Basin.

The Texas Co. buys Salt Creek and Big Muddy crude.

CALIFORNIA
Standard Oil Co. of California

Santa Maria and Ventura Posted by *Union Oil Co.

Gravity	Signal Hill Huntington Beach	Ingle-wood Torrance	Whittier La Habra	Newhall, McKittrick, Kern River	Olinda-Brea Canon, Richfield	Athens-Rosecrans Dominguez	Monte-bello	Coyote Hills	Santa Fe Springs	Midway-Sunset Elk Hills	Lost Hills	Coalinga	Wheeler Ridge	Santa Maria	Ventura
14-14.9	$ .85	$ .85	$ .85	$ .75	$ .85	.....	$ .85	$ .85	.....	$ .75	$ .75	$ .75	$ .75	$ .85	$ .85
15-15.9	.87	.87	.85	.75	.87	.....	.85	.85	.....	.75	.75	.75	.75	.85	.85
16-16.9	.90	.90	.85	.75	.90	.....	.85	.85	.....	.75	.75	.75	.75	.85	.85
17-17.9	.94	.94	.85	.75	.94	.....	.85	.85	.....	.75	.75	.75	.75	.85	.85
18-18.9	.98	.98	.86	.75	.98	.....	.86	.86	.....	.75	.75	.75	.75	.85	.85
19-19.9	1.04	1.04	.87	.75	1.04	.....	.87	.87	.....	.75	.75	.75	.75	.85	.85
20-20.9	1.10	1.10	.89	.....	1.10	.....	.89	.90	.....	.82	.82	.79	.78	.90	.90
21-21.9	1.16	1.16	.91	.....	1.16	.....	.91	.98	.....	.90	.90	.86	.81	.97	.97
22-22.9	1.22	1.22	.94	.....	1.22	.....	.94	1.06	.....	1.00	1.00	.93	.85	1.04	1.04
23-23.9	1.28	1.28	.....	.....	1.28	.....	.97	1.14	.....	1.11	1.11	1.00	.89	1.11	1.11
24-24.9	1.34	1.34	.....	.....	1.34	$1.34	1.01	1.22	1.02	1.22	1.22	1.07	.93	1.18	1.18
25-25.9	1.40	1.40	.....	.....	1.40	1.40	1.05	1.30	1.08	1.33	1.33	1.14	.97	1.25	1.25
26-26.9	1.46	1.46	.....	.....	1.46	1.46	1.09	1.38	1.16	1.44	1.44	1.21	1.01	1.32	1.32
27-27.9	1.52	1.52	.....	.....	1.52	1.52	1.13	1.46	1.24	1.55	1.55	1.28	1.05	1.39	1.39
28-28.9	1.58	1.58	.....	.....	1.58	1.58	1.17	1.54	1.32	1.66	1.66	1.35	.....	1.46	1.46
29-29.9	1.64	.....	.....	.....	1.64	1.64	1.21	1.62	1.40	1.77	1.77	1.42	.....	1.53	1.53
30-30.9	1.70	.....	.....	.....	1.70	1.70	1.25	1.70	1.48	1.88	1.88	1.49	.....	1.60	1.60
31-31.9	1.76	.....	.....	.....	.....	1.76	.....	.....	1.60	1.99	1.99	1.56	.....	.....	1.67
32-32.9	1.84	.....	.....	.....	.....	1.84	.....	.....	1.72	2.10	2.10	1.63	.....	.....	1.73
33-33.9	.....	.....	.....	.....	.....	1.92	.....	.....	1.84	2.21	2.21	1.70	.....	.....	1.79
34-34.9	.....	.....	.....	.....	.....	2.00	.....	.....	1.96	.....	2.32	1.77	.....	.....	1.85
35-35.9	.....	.....	.....	.....	.....	2.08	.....	.....	2.08	.....	.....	1.84	.....	.....	1.92
36-36.9	.....	.....	.....	.....	.....	2.16	.....	.....	2.16	.....	.....	.....	.....		
37-37.9	.....	.....	.....	.....	.....	2.24	.....	.....	2.24	.....	.....	.....	.....		
38-38.9	.....	.....	.....	.....	.....	2.34	.....	.....	2.34	.....	.....	.....	.....		
39-39.9	.....	.....	.....	.....	.....	2.44	.....	.....	2.44	.....	.....	.....	.....		
40-40.9	.....	.....	.....	.....	.....	2.54	.....	.....	.....	.....	.....	.....	.....		
41-41.9	.....	.....	.....	.....	.....	2.64	.....	.....	.....	.....	.....	.....	.....		
42-42.9	.....	.....	.....	.....	.....	2.74	.....	.....	.....	.....	.....	.....	.....		

*Union Oil Co. also purchases Long Beach crude and is maintaining the same gravity and price schedule in that field as the Standard maintains in Signal Hill and Huntington Beach fields. The Union also buys and pays the same prices as the Standard in the Rosecrans-Dominguez fields, on gravities ranging from 14 degrees to and including 24.9 degrees; and in Santa Fe Springs, on gravities ranging from 20 to and including 23.9 degrees.

REFINERS' and COMPOUNDERS' SUPPLIES

Following are the average market prices for the week on materials used by refiners and compounders f. o. b. shipping point as effective this date.

Refiners' Supplies

	July 6	June 28
Soda Ash light 58% bags.cwt.	-$1.38	-$1.38
Silicate of Soda 60 deg. drums.....cwt.	- 1.65	- 1.65
Sal Soda wks.....1.10-	1.25	1.10- 1.25
Caustic Soda 70% solid..cwt.	- 3.10	- 3.10
Chloride of Lime.....cwt. works.....	- 2.00	- 2.00
Sulphuric Acid 60 deg. tank cars f. o. b. shipping point.....per ton	10.50-11.00	10.50-11.00
Liquid Chlorine tank cars works.....lb.	- .04	- .04

Compounders' Supplies (Open Market)

Vegetable Oils—		
Linseed carloads spot.....lb.	11.4	11.5
July.....	11.4	11.5
Tanks, spot.....	10.4	10.5
Boiled carloads spot.....lb.	10.5	10.6
*Soya Bean spot, Bbls....lb.	13¾	13¾
Animal Oils—		
English Degras.....lb.	.05¾	-.05¾
Domestic Degras, bbls., carloads.....lb.	-.04¾	-.04¾
*Horse.....lb.	-.09½	-.09½
Oleic Acid—		
Dist. Bbls.....lb..	.09¾-.10¼	.09¾-.10¼
Saponified Bbls.....lb..	.11 -.11½	.11 -.11½
Castor Oil—		
No. 1 Carlots, Bbls.....	-.12¾	-.12¾
No. 3 Carlots, Bbls.....	-.12¼	-.12¼
Lard Oils—		
Prime Winter Strained. to 1½ffa.40/45c.t.lb.	.18⅞	.18⅞
Extra Winter Strained. 2 to 4½ffa.40/45c.t.lb.	.15¾	.15¾
Extra..... 4 to 5 ffa.40/45c.t.lb.	.13½	.13½
Extra No.1 7 to 10 ffa.40/50c.t.lb.	.12¾	.12¾
No. 1.....15 to 18 ffa.40/45c.t.lb.	.12¼	.12¼
No. 2.....22 to 23 ffa.40/45c.t.lb.	.12	.12
Prime Edible Tallow under 1¼ffa. 40/45c.t.N.Y.....lb..	-10¼	-10¼
Tallow acidless.....lb.	-.12	-.12¼
Lard Stearine.....lb.	nominal	nominal
Oleo Stearine.....lb.	-.14¾	-.14¾
Neatsfoot Oil—		
Pure.....bbls.-lb.	.16¼	.16¼
Extra.....do lb.	.12¾	.12¾
No. 1.....bbls.-lb.	.12¼	.12¼
Cold pressed.....lb.	.18¾	.18¾
Fish Oils—		
Menhaden Oil		
Light pressed.....gal.	-.65	-.65
White.....gal.	-.67	-.67
Yellow bleached.....gal.	-.70	-.70
*Herring tank cars coast.....gal.	-.50	-.50
Whale, extra winter bleached.....gal.	-.82	-.82
Seal.....gal.		nominal
Naval Stores—		
Turpentine, N. Y.....gal.	.86	.87
Turpentine†.....gal.	.79¼	.80¼
Rosin, B. N. Y.....bbl.	12.00	12.50
Rosin, F. N. Y.....bbl.	12.85	13.85
Rosin, B†.....bbl.	11.00	11.00
Rosin, F†.....bbl.	12.05	12.35
Rosin Oil 1st run.....gal.	.67	.67
Rosin Oil 2nd run.....gal.	.69	.69
Pine Tar—		
Kiln Burnt.....bbl.	14.50	14.50
Retort.....bbl.	13.50	13.50
†Savannah, Ga. market. *Nominal.		
Alcohol—Denatured		
Formula 5		
Bbls.....gal.	-35	-34
Drums.....gal.	-28	-28

Heavier Buying Expected Soon in Pennsylvania

CLEVELAND, July 6.—Pennsylvania markets were quiet after the July Fourth holiday. Refiners and carlot marketers were expecting heavier buying after jobbers had checked their stocks of gasoline and ascertained the volume of holiday drafts.

Kerosene continues to slide and is approaching the level of prices that obtained in early spring. Buying for harvesting and fall plowing demand is expected to begin before many weeks. Fuel oil of 36-40 gravity is firm.

Bright stocks are strong and still scarce. Neutrals are less active than in the last two months but prices are holding up well. Steam refined stocks are quiet and easy. Wax is also quiet.

Calif. Natural Gasoline Market Depressed

LOS ANGELES, CALIF., July 7.—A serious depression in the natural gasoline market on the Pacific Coast was caused by the contracting of approximately 200 cars of Oklahoma natural gasoline by California refiners recently.

For several weeks past, Oklahoma producers and some of the coast refiners have been trying to get together on price and freight rates to bring the Oklahoma stuff in California on a competitive basis with local production. After the first few shipments of the Oklahoma material the local natural gasoline market was reduced to discourage further shipments. For a period following, practically no more Oklahoma shipments were made.

Eastern and Central Kentucky Markets

ASHLAND & LEXINGTON, KY., —July 6.—Practically no change in price, or condition are evident in the Kentucky districts over the previous week with the exception of Kerosene which has taken another slump. Todays prices are:—

58-60 gasoline	13¾	13
60-62 gasoline	14	13½
64-66 gasoline	14¼	....
68-70 gasoline	14½	....
41-43 w.w. kerosene	8¼	8
24-26 fuel oil	4¾	....
Gas oil	6	5½

High Viscous Gulf Lubes Cheaper

HOUSTON, July 6.—Strength in Gulf Coastal lubricants of the lower viscosity grades has not extended to the higher viscosity grades, prices of which are ½ cent a gallon lower than a week ago. Manufacturers expect better demand in August when contracts for winter requirements will begin to arrive. They report foreign buyers are more interested. One Gulf Coastal Independent moved a cargo of assorted lubricants at the end of June and will load part of another cargo late this month.

Benzol Movement Heavier

By Special Correspondent

NEW YORK, July 6.—The movement in motor benzol is slightly heavier but the easier tendency in gasoline tank wagon prices has tended to create the belief that the motor benzol may ease off soon. However, leading marketers are still quoting 25 cents a gallon, in tank cars at the refineries as the inside price.

The export demand for motor benzol is much better but the majority of exporters are not offering very freely at present. Pure and 90 per cent benzol are in routine demand. Motor fuel mixture makers are taking large quantities of motor benzol on contract.

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ALL KINDS OF LUBRICATING GREASE FOR JOBBERS

OIL STOCKS AND FINANCES.

National Petroleum News

Standard Second Quarter Payment Is Record for Regular Dividends

CLEVELAND, July 6.

COMPANIES of the Standard Oil group in the second quarter of 1926 have paid cash dividends amounting to $50,610,453. This is the largest sum paid out in dividends with the exception of the first quarter of 1913 when special disbursements totaled $39,335,352 and is larger than the second quarter of 1916 and the fourth quarter of 1922 when special disbursements also were made. Payments this last quarter include only $4,000,000 special disbursement, that of the Southern Pipe Line Co.

Dividends in the first half of this year amount to $91,229,741, compared with $77,244,753 in the second half of 1925 and $76,261,346 in the first half of last year. Concerning the dividends in the second quarter of this year, Carl H. Pforzheimer & Co., New York, specialists in Standard Oil stocks, has this to say:

"The second quarter dividend distributions include the payment of $4,000,000 by the Southern Pipe Line Co., which is reducing its capitalization from $10,000,000 to $5,000,000 and paying $4,000,000 in cash in partial liquidation. Humble Oil & Refining Co., which recently increased its capital 66⅔% by subscription privileges, increased its quarterly disbursement from $525,000 to $1,458,333 by paying an extra dividend of 20c a share in addition to the regular quarterly dividend of 30c. Prairie Oil & Gas Co. by resuming quarterly dividends, added $1,200,000 to the total payments for the quarter. Standard Oil Co. of California's quarterly payments increased approximately $1,500,000 due to the increase in the share capitalization by the absorption of the Pacific Oil Co. The payment for the quarter by this company was $6,301,217.

Standard Oil Co. of New Jersey made the largest payment of any company, paying $8,646,587, of which $5,147,062 was on the common stock. Standard Oil Co. of Indiana was the second largest, paying out $7,921,295, which is all paid on one class of stock. Standard Oil Co. of Nebraska's semi-annual payment was larger due to the 50% stock dividend just paid. Semi-annual dividends of Solar Refining Co., Illinois Pipe Line Co. and Standard Oil Co. of Nebraska served to increase the dividend payments of the quarter."

Tabulation of dividends paid by the group since 1919 by quarters, follows:

	First Quar.	Second Quar.	Third Quar.	Fourth Quar.	Totals
1926	$40,619,288	$50,610,453			
1925	34,355,618	41,905,728	$35,140,584	$42,104,169	$153,506,099
1924	34,975,867	40,699,592	34,712,810	40,000,286	150,388,555
1923	33,499,988	36,311,251	31,066,251	37,545,805	138,423,295
1922	28,206,068	29,205,349	28,628,099	*43,000,349	129,039,865
1921	28,987,611	29,131,727	27,609,227	29,586,727	115,294,292
1920	26,796,606	27,313,396	29,804,587	31,861,824	115,776,793

*Includes aggregate extra disbursements of $11,600,000 by four eastern pipe line companies.

Standard of New Jersey May Call Preferred

NEW YORK, July 3.—It is reported in financial quarters that Standard Oil Co. of New Jersey is considering retirement of its 7 per cent preferred stock of which $199,972,900 is outstanding. The issue is callable only in its entirety at 115 and accrued dividends. It is selling on the market at between 116 and 117. Its price has given credence to the reports of probable retirement because it is selling below the prices of other good preferred stocks.

One of the plans under consideration, it is said, calls for the use of common stock as part payment for the preferred. It is not known whether the company contemplates exchanging common stock and some cash for the preferred stock, or offering common stock to the present stockholders and using the proceeds for the retirement of the preferred.

On Dec. 31, last, the company and subsidiaries had $11,776,000 cash on hand and in banks, and government and other marketable securities which were carried at $50,753,422, a considerable portion of which might be applied to the retirement of the preferred. The company has no funded indebtedness.

Since Jan. 1 Standard of New Jersey is said to have received more than $31,000,000 from the Humble Oil & Refining Co. in liquidation of indebtedness. Its earnings this year are said to be at a greater rate than in 1925 when it netted $111,231,555 or $4.72 a share on the common stock after preferred dividends and all other charges.

S. O. California to Call Notes

CLEVELAND, July 6.—Standard Oil Co. of California has given notice that it will redeem on Aug. 1 all of its $25,000,000 serial 5 per cent gold notes at par plus interest to Aug. 1 and the following premiums: One-half of 1 per cent on the series maturing Aug. 1, 1927 and one-half of 1 per cent for each additional year. Notes should be presented for payment to the Equitable Trust Co., New York, or the Anglo-California Trust Co., San Francisco.

Transcontinental's Net Falls

CLEVELAND, July 3.—In the first quarter of this year Transcontinental Oil Co. netted $105,474 after interest, depreciation and depletion, equivalent to 66 cents a share on the $15,750,000 7 per cent preferred stock. In the first quarter of 1925, the company netted 8 cents a share on the no par common stock after dividends on the preferred stock. Income accounts for the two quarters compare:

	1926	1925
Gross income	$3,279,879	$4,127,051
Oper. expense	2,776,295	2,949,080
Oper. profit	$ 503,584	$1,177,971
Interest, etc.	144,519	339,302
Profit	$ 359,065	$ 838,669
Deprec., deplet.	253,591	250,000
Profit	$ 105,474	$ 588,669

Cleveland Stock Market

July 2

	Par	Bid	Asked	Last Sale
Canfield Oil Co.	$100	.....	.....	107
do pfd.	100	.....	95	100
Fred G. Clark Co.	10	2⅞	4½	3¼
National Refining Co.	25	37½	38	37½
do pfd.	100	130	135	129½
Paragon Refining Co.	25	7¼	7½	7¼
do pfd.	100	.....	75	65

x—ex dividend.

Oil Dividends

Atlantic Ref. pfd. q.	$1.75	Aug. 2	July 15
Big Lake	20%	July 30	July 22
Eureka P. L. q.	1.00	Aug. 2	July 15
Indiana P. L. q.	1.00	Aug. 14	July 18
do extra	1.00	Aug. 14	July 18
Pan Amer. West. A. & B. q.	.50	July 30	July 10
Plymouth	.50	July 31	July 22
Salt Creek Prod. q.	.62½	Aug. 2	July 15
do extra	1.00	Aug. 2	July 15
Tide Water pfd. q.	1.25	Aug. 16	July 31

Transactions In Oil Shares on New York Stock Exchange

1925 High	1925 Low	1926 High	1926 Low		Listed Capital	Par Value	Stocks	Div. Rate	Last Paid	Transactions week ended July 2 Sales	First	High	Low	Last	Ch'ge
....	.....	31⅝	24¼	(sh)	713,000	N.P.	Amerada Corp.	40cQ	Apr. 30, 26	36,200	30½	31⅝	30¼	30⅞	+ ⅜
79¾	48	74	50	(sh)	200,000	N.P.	American Republics.	.....	.....	.....	.....	.....	.....	.....	.....
47¼	32	59½	44¾	$	56,000,000	$25	Associated Oil.	50cQ	Apr. 26, 26	300	54	54½	53⅛	53⅛	— ⅜
117½	95⅛	128¾	97		50,000,000	100	Atlantic Refining.	.....	June 16, 24	8,400	116½	120½	116½	119	+2
117¾	113¼	120	115¾		20,000,000	100	do pfd.	$1¾Q	May 1, 26	100	118¾	118¾	118¾	118¾	+ ¾
38½	18¾	33½	23¾		25,000,000	25	Barnsdall Corp. A.	50cQ	July 1, 26	7,000	26⅛	26⅞	26	26⅜	0
30	16	29½	25¼		3,713,275	25	do B.	50cQ	July 1, 26	.....	.....	.....	.....	.....	.....
34⅜	23⅞	38⅛	30⅝	$	45,040,125	$25	California Petroleum.	50cQ	June 1, 26	26,000	33⅜	34¼	33½	34¼	+ ⅜
70	42½	73	50		28,542,500	100	General Asphalt.	.....	.....	30,400	68½	72¼	68	71⅜	+2⅜
109	86½	114¾	94⅜		7,416,000	100	do pfd.	$1½Q	June 1, 26	300	109½	111¾	109½	111	+ ½
59⅜	42	70⅛	49½		29,429,550	25	General Petroleum.	75cQ	June 1, 26	19,600	68⅛	70⅜	68⅛	69⅜	+1⅜
85	59	72	50¼		25,000,000	100	Houston Oil.	.....	.....	800	60¼	61	60¼	61	0
41¾	13½	34	19¾	(sh)	500,000	N.P.	Independent Oil & Gas.	25cQ	Apr. 12, 26	16,000	24¾	25⅛	x23¾	24¼	0
14¼	5½	15¾	9	$	3,204,590	$10	Indian Refining.	.....	Dec. 15, 20	4,800	10⅛	10⅜	10	10⅛	+ ⅛
12⅝	6	12½	8		4,545,860	10	do ctfs.	.....	.....	1,100	8½	9	8	8⅞	+ ⅛
110	77	104	90		2,296,400	100	do pfd.	.....	Dec. 15, 21	.....	.....	.....	.....	.....	.....
1½	¼	¾	¼		1,678,760	10	Kansas & Gulf.	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	24½	19⅛	(sh)	4,000,000	N.P.	Lago Oil & Transport.	.....	.....	35,900	22½	23⅛	22¼	22⅝	+ ¼
23¾	13⅝	19⅞	12	(sh)	1,131,216	N.P.	Louisiana Oil Refining.	.....	.....	12,600	17¾	18½	17½	17⅞	0
35½	20⅜	28⅞	20¾	(sh)	330,000	N.P.	Maracaibo Oil.	.....	.....	3,000	25	26⅜	24⅝	24⅝	— ⅜
60⅛	32⅝	63⅜	49¼	(sh)	1,895,823	N.P.	Marland Oil Co.	$1Q	June 30, 26	54,400	60⅝	61½	59¾	61	+ ½
250	225	.....	.....	$	45,942,800	$100	Mexican Petroleum.	$3Q	Apr. 20, 26	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....		12,000,000	100	do pfd.	$2Q	Apr. 20, 26	.....	.....	.....	.....	.....	.....
22¾	20	12½	6	(sh)	945,939	N.P.	Mexican Seaboard.	.....	Nov. 15, 24	39,500	11⅜	12½	10¾	11⅜	+ ⅜
38	25¾	37	28	(sh)	1,357,800	N.P.	Mid-Continent Petroleum.	.....	Aug. 1, 23	12,400	31⅜	32½	31⅛	31¾	+ ⅝
94¾	88	100	90	$	6,718,000	$100	do pfd.	$1¾Q	June 1, 26	700	99½	100	98	99½	+ ½
3¾	⅝	2½	1¼		25,415,540	10	Middle States.	.....	July 1, 23	1,300	1⅜	1½	1⅜	1½	+ ⅛
1¾	1½	1⅜	⅞		4,384,680	.....	do ctfs.	.....	.....	400	⅞	⅞	⅞	⅞	0
78½	51⅝	88¼	1	(sh)	3,500,000	N.P.	Pacific Oil.	$1.50S.A.	Jan. 20, 26	11,100	1¼	1½	1¼	1½	+ ¼
85⅞	59½	76½	56⅛	$	48,307,400	$50	Pan American P. & T.	$1.50Q	Apr. 20, 26	22,100	72⅛	73¼	72	72	+ ⅜
84½	60⅛	78¾	56⅞		91,025,100	50	do B.	$1.50Q	Apr. 20, 26	61,800	73¾	75	73	73⅝	+1⅜
49¾	37¼	46	34	(sh)	400,000	N.P.	Pan American Western B.	50cQ	Apr. 30, 26	3,800	39⅜	39½	38⅝	39⅜	+ ⅜
6¼	2¼	3²	4½	(sh)	198,770	N.P.	Panhandle P. & R.	.....	.....	23,500	25½	27½	22¾	24	—1⅞
60½	37	99⅜	51	$	2,935,206	$100	do pfd.	.....	July 2, 23	200	90¼	90¾	90	90	0
47⅜	36¾	49⅜	40	(sh)	2,406,692	N.P.	Phillips Petroleum.	75cQ	July 1, 26	47,500	48	48⅜	47⅝	48¼	+ ¼
3½	1¼	1⅞	¾	$	29,622,925	$25	Pierce Oil Corp.	.....	.....	600	⅞	⅞	¾	¾	— ⅛
40	20¼	27⅛	15½		15,000,000	100	do pfd.	.....	Feb. 1, 22	.....	.....	.....	.....	.....	.....
8¼	4½	7	3⅜	(sh)	2,500,000	N.P.	Pierce Petroleum.	.....	.....	9,900	3⅝	3⅝	3¼	3⅜	— ¼
32⅝	12½	17⅛	11	$	11,467,850	$50	Producers & Refiners.	.....	Sept. 15, 23	900	13	13	12⅝	12⅞	+ ⅛
47⅝	27	35	30¾		2,845,350	50	do pfd.	.....	May 1, 25	.....	.....	.....	.....	.....	.....
38¾	25⅛	31	25⅜		75,959,250	25	Pure Oil Co.	37½cQ	June 1, 26	6,900	27¾	27⅞	27⅜	27½	0
108½	103	112¾	106		18,000,000	100	do 8% pfd.	$2Q	July 1, 26	.....	.....	.....	.....	.....	.....
57⅜	48¼	57⅜	50	(sh)	691,922	13.40	Royal Dutch, N. Y. shares.	$1.339	Jan. 29, 26	3,100	53	53¼	52⅞	53⅛	+ ⅜
49	39½	48⅝	41	(sh)	93,345	£2	Shell Transport & T.	96½c	Jan. 22, 26	.....	.....	.....	.....	.....	.....
28⅜	21⅜	28⅛	24	(sh)	10,000,000	N.P.	Shell Union Oil.	35cQ	June 30 26	64,300	25⅞	27⅜	25¾	27⅛	+1¼
106½	99½	114	103	$	20,000,000	$100	do pfd.	$1½Q	May 15 26	300	108⅝	114	108⅝	114	+6½
28½	17¾	28⅝	18		7,207,620	10	Simms Petroleum.	50cS.A.	July 1, 26	6,500	19¼	19⅞	19⅛	19⅛	— ¼
24⅞	17	24⅞	19⅜	(sh)	4,489,887	N.P.	Sinclair Consolidated.	.....	May 31, 24	32,700	22¼	22⅞	22¼	22½	0
94⅛	78¾	99½	90	$	17,852,200	$100	do pfd.	$2Q	May 15, 26	300	99	99⅛	99	99	0
32½	21¾	36⅞	26⅝		23,988,590	25	Skelly Oil Co.	50cQ	June 15, 26	47,100	36⅞	37⅛	35⅜	35⅝	—1
.....	.....	62¾	52⅝	(sh)	13,016,434	N.P.	S. O. California.	50cQ	June 15, 26	116,600	59⅜	62¾	59¼	62⅜	+3
47½	38⅜	46⅜	40¼		515,109,675	25	S. O. New Jersey.	25cQ	June 15, 26	49,200	45	45⅛	44½	45⅛	+ ⅛
119	116¼	119⅜	116⅛		199,972,900	100	do pfd.	$1¾Q	June 15, 26	3,600	116⅜	117	116⅜	116¼	— ¼
48⅞	38⅛	41⅜	30⅛	(sh)	1,103,931	N.P.	Sun Oil.	25cQ	June 15, 26	800	33⅜	33⅜	33	33	— ½
6⅛	2	4¼	2	(sh)	1,121,368	N.P.	Superior Oil Corp.	.....	Dec. 20, 20	1,500	2¼	2⅜	2⅛	2⅛	— ⅛
55	42¾	56	48	$	164,450,000	$25	The Texas Co.	75cQ	Mar. 31, 26	4,800	55	55⅛	54⅜	54¾	— ¼
23⅜	10⅞	19½	12⅛		8,380,340	10	Texas Pacific Coal & Oil.	.....	June 30, 23	3,600	14⅝	14⅝	14⅛	14⅜	+ ⅛
36⅞	30¾	39¼	30¼	(sh)	2,137,570	N.P.	Tide Water Oil Co.	37½c	June 30, 26	1,000	33¼	33⅜	32¾	33	0
101	99	103	90	$	20,672,900	$100	do 5% pfd.	$1.25Q	May 15, 26	1,000	93⅞	94	92⅞	92⅞	—1⅜
5⅞	3½	4¾	3	(sh)	3,742,029	N.P.	Transcontinental Oil.	.....	.....	11,700	3¾	4	3⅜	4	+ ¼
43⅜	33	56	37¼	$	40,480,800	$25	Union Oil of California.	50cQ	May 10, 26	39,000	54¼	54¼	52⅝	53	0
134	96¼	94⅜	80		24,423,300	100	Union Tank Car Co.	$1¼Q	June 1, 26	700	93½	93¾	91½	91½	—1½
117⅜	113¾	117½	113¾		12,000,000	100	do pfd.	$1¾Q	June 1 26	700	117⅜	117½	117⅜	117½	+ ⅜
31¾	25½	29¼	25⅛	(sh)	490,000	N.P.	White Eagle Oil & Refining.	50cQ	Apr. 20, 26	2,000	27¾	27¾	27¼	27¼	— ¼

*New High †New Low xEx-dividend Total Sales 889,500

Pittsburgh Stock Exchange

1925 High	1925 Low	1926 High	1926 Low	Par Value	Stocks	Transactions Week Ended July 2 Sales	First	High	Low	Last	Ch'ge
.....	.....	6⅜	6⅜	N.P.	Andes Petroleum.	.....	.....	.....	.....	.....	.....
8¼	5¼	7	5¾	$10	Arkansas Nat. Gas.	1,215	5⅞	6	5⅞	5⅞	— ⅛
18	14½	17	12½	$10	Devonian Oil.	465	14	14½	14	14	— ½
112⅝	105⅜	115	112	$100	Duquesne Lt. 7% pfd.	61	115	115	115	115	+ ½
.....	.....	10	5½	N.P.	HoustonGulfGas(w.i.)	350	7	8	7	8	+ ¾
.....	.....	33½	30	25	Lone Star Gas Corp.	1,919	31⅜	31½	31⅜	31½	+ ½
37¼	31	37	33⅜	25	Ohio Fuel Corp.	4,553	36½	36½	x35⅝	36⅜	+ ⅝
34	26	34	28	25	Oklahoma Nat. Gas.	5,252	29⅛	29½	x28⅜	29	— ⅛
8¾	5	5⅝	4	5	Pittsburgh O. & G.	.....	.....	.....	.....	.....	.....
9⅝	6	10	8	10	Salt Creek Cons.	84	8¾	8⅞	8¾	8⅞	+ ⅛
13¾	8½	10	8½	10	Tidal Osage.	.....	.....	.....	.....	.....	.....

Pittsburgh Curb Market

1925 High	1925 Low	1926 High	1926 Low	Par Value	Stocks	Transactions Week Ended July 2 Sales	First	High	Low	Last	Ch'ge
2½	.60	3⅜	2½	$ 5	Colombia Synd.	.....	.....	.....	.....	.....	.....
.60	.15	.15	.15	5	Duquesne Oil.	.....	.....	.....	.....	.....	.....
9	5½	.....	.....	10	Forest Oil.	.....	.....	.....	.....	.....	.....
92⅜	64	91½	85	25	Gulf Oil Corp.	.....	.....	.....	.....	.....	.....
12½	8¼	12	7½	N.P.	Leonard Oil & Dvlp.	.....	.....	.....	.....	.....	.....
.....	.....	1⅝	1⅝	N.P.	Mountain & Gulf.	.....	.....	.....	.....	.....	.....
2¾	1⅜	.....	.....	1	Oklahoma Eastern.	.....	.....	.....	.....	.....	.....
.47	.20	.20	.15	10	Omar O. & G.	.....	.....	.....	.....	.....	.....
.....	.....	2	1¾	5	Pittsburgh Oil Dev.	.....	.....	.....	.....	.....	.....
27½	25	33½	26	10	Plymouth Oil.	100	32	32	32	32	— ½
7	3	5½	3	5	States Oil.	.....	.....	.....	.....	.....	.....
4	1⅞	3½	2⅜	$ 1	Texon Oil & Land.	4,865	3½	*3½	3¼	3 1/16	+ 1/16
11	9	9½	8	10	Tidal Osage.	.....	.....	.....	.....	.....	.....
.....	.....	42⅜	41	N.P.	Waverly Oil Wks. A.	.....	.....	.....	.....	.....	.....

*New High †New Low xEx Dividend

NEW YORK BONDS

Week Ending July 2

	High	Low	Last	Ch'ge
Amer. Rep. Deb. 6s	100	99⅞	99⅞	— ⅛
Associated Oil gold 6s	103	102¾	102¾	— ⅛
Atlantic Refg. deb 5s	100⅝	100	100½	— ⅛
Barnsdall Corp. 6s	99	98¼	98¼	— ¾
Cal. Petrol sf 6½s	104	103⅝	103¾	— ¼
Empire Gas & Fuel 7½s	103¼	102⅞	103¼	— ⅛
Empire Gas & Fuel 6½s	97¾	97⅛	97¾	+ ¼
Gen. Asphalt 6s	104¾	104¾	104¾	— ¾
Gen. Petroleum 5s	100⅜	100⅛	100⅜	+ ⅛
Humble Oil & Refg. 5½s	102⅞	102½	102¾	— ⅛
Mid-Cont. Pet. 6½s	104½	104⅛	104⅛	0
Pan-Amer. P. & T. 7s	106¼	105½	106¼	+ ¾
Pan-Amer. P. & T. 6s	108⅛	108	108⅜	— ⅛
Pierce Oil deb 8s	107	105¾	105¾	0
Prod. & Refnrs. 8s	111	111	111	0
Sinclair Con. Oil Col. 7s	99¼	98¼	99	— ½
Sinclair Con. Oil Con. 6½s	94½	94⅜	94⅜	— ¼
Sinclair Con. Oil 6s	106¾	105½	105¾	+ ⅛
Sinclair Crude Oil 6s	100¾	100½	100¾	— ¼
Sinclair Pipe Line sf 5s	91⅜	91⅛	91⅛	0
Skelly Oil 6½s	148½	144	144	—3½
Superior Oil 7s	95	95	95	0
Union Oil of Cal. 6s-A	108	107¾	107⅞	— ⅛
Union Oil of Cal. 5s-B	102	102	102	+ ⅜
Union Oil of Cal. 5s-C	99	98¾	98¾	— ¼

NEW YORK CURB BONDS

	High	Low	Last	Ch'ge
Cities Serv. 6s '66	93⅛	93⅛	93⅛	0
Cities Serv. 6s new	93⅜	93⅜	93⅜	0
Cities Serv. 7s "D" '66	106⅛	105⅜	105⅜	+ ⅜
Cities Serv. 8s "E" '66	112⅜	111½	112⅛	+2⅛
Galena S O 7s	92½	91¾	91¾	— ¾
General Pet. 6s '28	101⅜	101¼	101⅜	+ ⅛
Gulf Oil 5s '37	100¾	100⅜	100⅝	— ⅛
Gulf Oil 5½s '27	100⅝	100⅜	100⅜	— ⅛
Gulf Oil 5½s '28	101	101	101	0
Indepen. Oil 6½s '31	98¾	98¼	98¼	0
Pan Amer. Pet. 6s '40	105	101	105	+4⅛
Pure Oil 6½s '33	103½	103¼	103½	+ ¼
S O N Y 6½s '33	106⅛	106	106⅛	— ⅛
Sun Oil 5½s '39	100½	100	100	— ¾
Trans. Cont. Oil 7s '30	91½	91	91	— ⅜
United Oil Prod. 8s '31	35¼	35¼	35¼	+3¼

Standard Oil Stock Traded in New York Curb Market

1925 High	1925 Low	1926 High	1926 Low	Outstanding Capital	Par Value	Stocks	Div. Rate	Last Paid	Transactions week ended July 2 Sales	First	High	Low	Last	Ch'ge
26⅜	17¼	19¾	16⅜	£ 4,000,000	£1	Anglo American	60¾cS.A.	May 27, 26	2,300	17⅜	17⅞	17⅜	17¾	+ ⅛
4¼	1⅜	2¼	1⅜	(sh) 500,000	N.P.	Atlantic Lobos	.....	.....	200	1⅜	1⅜	1⅜	1⅜	+ ⅛
12⅜	3	4½	3¼	$ 10,000,000	$10	do pfd	.....	.....	400	3⅝	3⅝	3⅝	3⅝	0
240	205	255	226	1,000,000	100	Borne Scrymser	‡34S.A.	Apr. 15, 26	70	235	239	235	239	+4
72	53½	59½	49	10,000,000	50	Buckeye Pipe Line	$1Q	June 15, 26	100	51	51	51	51	— ½
74	48½	75	65	3,000,000	25	Chesebrough Mfg	75cQ	June 30, 26	1,200	72	75	72	74⅞	+3⅜
115	110	.....	.....	1,000,000	100	do pfd	$1¾Q	June 30, 26	.....	.....	.....	.....	.....	.....
31½	21⅞	25⅞	19½	34,914,280	10	Continental Oil	25cQ	June 15, 26	42,500	21⅞	23	21¾	23	+1
17½	10	16	13½	1,500,000	25	Crescent Pipe Line	.....	Sept. 15, 23	.....	.....	.....	.....	.....	.....
150	132	137	107½	3,000,000	100	Cumberland Pipe Line	$3Q	June 15, 26	330	107½	109	107½	108	—1
98	61	63¾	47¾	5,000,000	100	Eureka Pipe Line	$1Q	May 1, 26	100	56	56	56	56	+1
68½	25½	32½	17	16,000,000	100	Galena Signal Oil	.....	June 30, 25	25	20	20	20	20	+ ½
105	88	94½	70	4,000,000	100	do new pfd	$2Q	June 30, 26	10	72½	72½	72½	72½	—1½
114	95	97½	70	2,000,000	100	do old pfd	$2Q	June 30, 26	260	75½	75½	73½	75	— ½
95	42¼	68¼	53½	72,916,650	25	Humble Oil & Refining	30cQ	July 1, 26	12,300	64½	65⅛	63⅜	63¾	— ⅛
154½	127	144½	131	20,000,000	100	Illinois Pipe Line	$6S.A.	June 30, 26	60	133	134½	133	133	—1
39¼	27¼	38¾	31½	sh 6,491,852	N P	Imperial of Canada	25cQ	June 1, 26	4,400	35¾	36	35¾	35¾	— ⅛
84	57¼	70	58	$ 5,000,000	50	Indiana Pipe Line	$1Q	May 15, 26	550	68	69	68	69	+2½
35⅜	22¼	35¼	28¾	sh ?,118,138	N P	International Petroleum	25c	Feb. 15, 26	9,100	33⅜	34	33¾	33¾	+ ⅜
25⅜	16½	20¾	14½	$ 6,362,500	$12½	National Transit	25cS.A.	June 15, 26	100	15½	15½	15½	15½	0
70	49¼	51½	39	5,000,000	100	New York Transit	$1Q	Apr. 15, 26	.....	.....	.....	.....	.....	.....
88	67½	80½	70¾	4,000,000	100	Northern Pipe Line	$3S.A.	July 1, 26	150	74	75¼	74½	75¼	+ ¾
75¼	60¾	67⅜	57½	60,000,000	25	Ohio Oil Co	50cQ	June 30, 26	1,500	60	60½	60	60	— ⅛
44½	19	23	15	10,000,000	25	Penn Mex Fuel	50c	May 21, 25	.....	.....	.....	.....	.....	.....
65½	45⅞	60¼	48	60,000,000	25	Prairie Oil & Gas	50cQ	May 31, 26	15,600	53⅞	54	53	53⅞	— ⅜
129¾	106	127½	122½	81,000,000	100	Prairie Pipe Line	$2Q	Apr. 30, 26	350	124	124½	124	124¼	—1¾
254	200	212	184½	4,000,000	100	Solar Refining Co	$5S.A.	June 19, 26	110	190	191	189½	191	+ ½
103	63	74½	61½	10,000,000	100	Southern Pipe Line Co	$1Q	Mar. 1, 26	.....	.....	.....	.....	.....	.....
47½	45	50	34½	20,000,000	25	South Penn Oil Co	37½cQ	June 30, 26	3,500	36	38	35½	38	+2
84	50	56	49	3,500,000	100	South West Pa. Pipe Line	$1Q	July 1, 26	500	50	51½	50½	51¼	+1¼
70¾	59½	70½	61¼	$ 223,756,258	$25	S. O. Indiana	62½cQ	June 15, 26	20,700	64⅝	65⅜	64½	65⅜	+1
46	30⅛	36½	25	8,000,000	25	S. O. Kansas	.....	June 16, 24	700	25¾	25⅞	25⅜	25½	0
137	114¾	134⅜	108	16,864,434	25	S. O. Kentucky	$1Q	June 30, 26	1,900	120½	120⅞	119⅞	120¼	+ ¼
270	231	275	183	4,500,000	100	S. O. Nebraska	$5S.A.	Dec. 19, 25	.....	.....	.....	.....	.....	.....
.....	.....	51⅜	42	4,518,000	25	do new w.i.	$1.25S.A.	June 21, 26	1,400	48½	49	48½	49	0
48⅜	40¼	47¼	30⅜	227,535,300	25	S. O. New York	35cQ	June 15, 26	50,000	33⅞	35⅛	34¼	34⅞	+1
.....	.....	34¼	30⅜	358,102,000	25	do new w.i.	.....	.....	.....	.....	.....	.....	.....	.....
369	338	362	292½	14,000,000	100	S. O. Ohio	82½Q	July 1, 26	10	303	303	303	303	—1
123	116	120	117	7,000,000	100	do pfd	$1¾Q	June 1, 26	10	118½	118½	118½	118½	0
27	12	23	15⅜	1,722,931	25	Swan-Finch Co	.....	Nov. 1, 19	50	17½	17½	17½	17½	0
109⅜	80⅛	112	95¾	61,919,950	25	Vacuum Oil Co	50cQ	June 19, 26	6,800	102⅛	105½	103	103¾	+1¼

STANDARD OIL ISSUES

New 24th Edition

STANDARD OIL BOOKLET

This Booklet contains description of properties, annual reports for 1925, dividend rates, price ranges and other important information relative to this group of companies.

CARL H. PFORZHEIMER & CO.

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25 Broad St. New York

New York Curb Market

1925 High	1925 Low	1926 High	1926 Low	Par Value	Stocks	Transactions week ended July 2 Sales	First	High	Low	Last	Ch'ge
11⅜	2⅜	14½	5	....	Amer. Maracaibo	4,400	6¼	7	6⅝	6¾	+ ½
8¾	5	6¾	5¾	$10	Arkansas Nat. Gas	.....	.....	.....	.....	.....	.....
.....	.....	19¾	14⅜	N.P.	Beacon Oil	2,900	17⅜	17¾	17	17½	.....
47⅜	38	.....	.....	$25	British-American	.....	.....	.....	.....	.....	.....
10¾	2¾	22¾	9¼	25c	Carib. Syndicate	7,900	15⅜	17⅛	15½	17¼	+1⅞
43	35	42⅝	37½	$20	Cities Service	8,200	41⅝	41⅞	41½	41⅞	+ ⅜
85¾	80¼	86⅞	82⅜	100	do pfd	1,100	86	86	85½	86	+ ⅜
8	7¾	7⅝	7⅜	10	do pfd. B	100	7½	7½	7½	7½	0
21¾	17⅜	20⅞	19	10	do bankers' sh	100	20¾	20¾	20¾	20¾	+ ⅜
2¾	.60	3½	2	N.P.	Colombia Syndicate	45,000	2⅞	3⅛	2¾	2⅞	— ⅛
15	8¼	15¼	10	N.P.	Creole Syndicate	3,700	12¾	12¾	12½	12¾	— ⅛
12¾	5	7¾	1⅝	N.P.	Crown Central	1,000	2¾	2¾	2½	2½	— ⅛
7	2	4	2	N.P.	Derby Oil & Ref	.....	.....	.....	.....	.....	.....
27	10½	19	13	N.P.	do pfd	100	18	18	18	18	0
6	1¾	7½	3⅞	N.P.	Gibson Oil	32,800	5½	5⅜	4⅞	5	— ⅛
3¾	1⅝	2	.63	N.P.	Gilliland v.t.c.	.....	.....	.....	.....	.....	.....
98¾	63½	98¾	82	$25	Gulf Oil Corp	5,300	86½	87½	85½	85½	—1
5⅞	2¼	4	2¼	N.P.	Kirby Petroleum	300	2¾	2¾	2¾	2¾	0
13	6	12¾	5¾	N.P.	Leonard Oil & Dev.	1,400	7⅞	8⅛	7¾	8¼	+ ⅛
25⅞	18	25¾	20	N.P.	Lion Oil Refining	2,800	23⅛	23½	22⅝	23	— ⅛
.....	.....	32¾	31½	....	Lone Star Gas	100	31½	31½	31½	31½	+ ½
4½	1¾	3¾	2¾	N.P.	Marland of Mexico	2,900	2¾	3⅜	2½	3⅛	+ ⅛
5¾	.56	5½	3¾	$10	Mexican-Panuco	2,900	4½	4⅜	4⅛	4⅜	0
2	1	1¾	1¾	1	Mountain & Gulf	.....	.....	.....	.....	.....	.....
26¾	18¾	26	23	10	Mountain Prod	3,800	25	25¾	25	25¾	+1
6¾	3¾	6¾	5⅞	5	New Bradford	700	6⅛	6⅛	6	6⅛	0
24¾	16¼	6⅛	2	10	New England Fuel	.....	.....	.....	.....	.....	.....
19¾	6¾	17	9⅝	1	New Mex. & Ariz	600	14	13⅞	13	13½	0
12⅝	8¾	17	8	25	New York Oil	.....	.....	.....	.....	.....	.....
37	14	36	34¼	25	Ohio Fuel Corp	.....	.....	.....	.....	.....	.....
.....	.....	9⅞	8½	....	Pandem	8,200	7¼	8½	7¼	8	— ½
2½	.90	2¾	.50	N.P.	Peer Oil Corp	500	.60	.60	.60	.60	+9
28¾	16	22¾	16¾	$10	Pennok Oil	7,100	16	16½	14¾	16½	+ ½
44½	16	38	14½	25	Red Bank Oil	1,600	29	29	25	25	—4½
53⅛	19	24⅛	14½	N.P.	Reiter-Foster	6,000	22	21¾	20	21¾	+ ⅛
9½	3½	7½	4¾	N.P.	Ryan Consolidated	900	6¾	6¾	6	6	— ⅛
9¾	6¾	10	8	$10	Salt Creek Cons	800	8⅞	8⅞	8⅞	8⅞	0
35	24	36	28⅞	10	Salt Creek Prod	11,200	32¾	34¼	32⅞	34⅛	+1⅛
3⅞	1	4	1¾	5	Savoy Oil	.....	.....	.....	.....	.....	.....
13¾	9	10	7⅜	10	Tidal Osage	500	8½	9	8½	9	+ ¼
10⅞	8	10	8¼	10	do non-voting	.....	.....	.....	.....	.....	.....
.....	.....	27	21	N.P.	Tide Water Assoc.	23,300	24½	24⅞	24¼	24⅞	+ ⅛
.....	.....	99¼	97½	100	" " " pfd.	1,700	97½	97½	97½	97½	0
4¾	1¾	8	4¼	5	Venezuelan Pet	5,100	7	7¼	6⅞	7⅛	— ⅛
.....	.....	29¾	23½	....	Warner-Quinlan w.i.	6,500	28½	29¼	28⅜	28¾	+ ⅛
31¼	22½	36⅛	22	N.P.	Wilcox O. & G. new	1,900	33⅛	33¼	31¾	31¾	—1½
7	3⅜	7¾	4⅜	N.P.	Woodley Petroleum	800	6⅜	6⅞	6½	6⅞	+ ⅝

*New High †New Low xEx-Dividend.

Asphalt Sales for 1925 Increase 3 Per Cent

WASHINGTON, July 2.—Sales of asphalt and asphaltic materials manufactured from petroleum at refineries in the United States during 1925 totaled 3,178,370 short tons, which is an increase over the 1924 sales of nearly 100,000 tons, or 3 per cent, according to the Bureau of Mines, Department of Commerce. These sales were valued at $42,825,770, an increase over 1924 of 19 per cent. Of the total sales during 1925, 1,206,700 tons, with a value of $15,305,760, were manufactured from domestic crude petroleum, and 1,971,670 tons, with a value of $27,520,010, were produced from foreign crude petroleum.

The Atlantic Seaboard refineries held first rank as manufacturers of asphalt in 1925, their sales of 1,313,270 tons (practically all of which was from foreign petroleum) comprising 41 per cent of the total for the United States. Asphalt for paving purposes was again the most important variety, its production registering a gain in 1925. Asphalt to be used in the roofing and waterproofing trades was second in importance, but its production remained stationary as compared to 1924.

17th Edition of Skinner Manual Published

The seventeenth annual number of the "Oil and Petroleum Manual" by Walter E. Skinner, is just issued. The price is $2.50 per copy. The publication of this English work, which usually takes place the end of May, was delayed due to the general strike, but facts and figures have been brought up to within a few days of publication.

The book of 410 pages, contains information on 596 oil companies, including producers, refiners, pipe and steamship carriers, and oil finance companies in all parts of the world. Officers and directors of each company are given, which lists include 2095 directors, 321 secretaries, 190 consulting engineers, managers, agents, etc., their names and addresses and company connections.

Included in the particulars of each company are the names of directors, officers, the date when the company was established, location of property, purchase consideration, number of wells sunk, oil production, description of work in progress, capital, and other financial information.

A table showing the monthly production of the principal companies known on the London stock exchange for 13 months ended Apr. 30, 1926, is also given. Copies can be seen and obtained from Oil Trade, 350 Madison Ave., New York.

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